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GEOLOGICAL SURVEY OF CANADA
COMMISSION GEOLOGIQUE DU CANADA

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JUNE 1993

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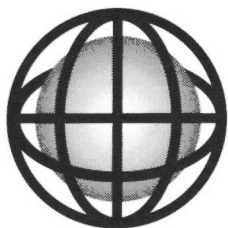
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*MINERAL
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*SECTEUR DE
LA POLITIQUE
MINÉRALE*

MINERAL INDUSTRY QUARTERLY REPORT

JUNE 1993



Energy, Mines and
Resources Canada

Énergie, Mines et
Ressources Canada

Canada

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Note to Reader

NEW FEDERAL DEPARTMENT OF NATURAL RESOURCES

On Friday, June 25, 1993, a new department of Natural Resources Canada was formed, combining the former Department of Energy, Mines and Resources and Forestry Canada. This action reflects the Government's commitment to streamlining government operations and represents a melding of organizations of similar form and function. At the same time, Mrs. Barbara Sparrow was appointed Minister Designate of the new organization. Subsequently, Ronald Bilodeau was named as the Deputy Minister Designate.

Although legislation will be required to formally establish the Department of Natural Resources, a reorganization has been announced. The new department consists of three resource sectors: the Forest Sector, the Mining Sector, and the Energy Sector; three science and technology sectors: the Geological Survey of Canada, the Mineral and Energy Technology Sector, and the Surveys, Mapping and Remote Sensing Sector; and a Corporate Services Sector.

During the reorganization, the former Mineral Policy Sector was renamed the Mining Sector. The name change is intended to more accurately reflect the diversity of the Sector's functions and clients. This sector will continue to address international and domestic issues affecting Canada's important coal, mineral exploration, ferrous and nonferrous, and industrial mineral industries. It will advise on competitiveness, environmental and commodity issues; gather and disseminate industry data, statistics and intelligence; and perform economic analysis and forecasts as well as financial and tax analysis. The Sector will manage federal-provincial coordination and liaison including Mineral Development Agreements, manage Crown land leases, and continue to work with clients on responsible economic development of the mineral and metal industry. Ron Sully has been appointed Assistant Deputy Minister-designate of the Mining Sector.

Preface

This publication is prepared by the Mineral Policy Sector of Energy, Mines and Resources Canada. Data appearing in this publication are compiled from many sources using the best information available to us. This report is intended to provide the reader with a digest of general information on the status of the mineral industry in Canada. It should not be considered an authority for exact quotation or an expression of the official views of the Government of Canada.

Your comments on the format and contents of this report are welcome. Specific comments can be directed to:

Rob Dunn
Mineral and Metal Statistics Division
Mineral Policy Sector
Energy, Mines and Resources Canada
460 O'Connor Street
Ottawa, Ontario
K1A 0E4

Telephone: (613) 996-6384
Facsimile: (613) 992-5565

MINERAL INDUSTRY INFORMATION CONTACT POINT

In order to provide our clients with timely access to information describing the mineral industry, the Mineral Policy Sector has established a contact point through which requests for specific statistical information on the mineral industry can be channelled. Once a request has been received, it will be immediately directed to the officer most able to address that request.

This contact point is:

Despo Makris
Mineral and Metal Statistics Division
Mineral Policy Sector
Energy, Mines and Resources Canada
460 O'Connor Street, Room 918
Ottawa, Ontario
K1A 0E4

Telephone: (613) 992-6522
Facsimile: (613) 992-5565

Introduction

After two years of declining output, the Canadian economy made some positive progress in 1992 as Gross Domestic Product (GDP) grew by 0.9% in real terms. This modest gain was achieved on the basis of growth in the services-producing industries of the economy, while the goods-producing industries as a whole declined for the third consecutive year. The GDP for the mining, quarrying and oil well industries, however, grew by 1.3% overall, as increased output by the crude petroleum and natural gas industries was only partly offset by declines in the mining and quarrying industries. An overview of mineral industry activity in 1992 is presented in the article entitled "General Review of the Mineral Industry in 1992." This article focuses on the nonfuel sector of the mineral industry and its performance in the context of the overall economy.

The total value of production of all mineral commodities, including mineral fuels, increased by 0.6% in 1992 to \$35.4 billion. Of the four mineral commodity groups (metals, nonmetals, structural materials and mineral fuels), the mineral fuels group recorded the only increase in the overall value of output, growing by 4.4% to \$20.8 billion. The value of nonfuel mineral production declined by 4.4% to \$14.6 billion as commodity prices remained low in general. In comparison to 1991, the results for individual commodities were mixed, as advances in the value of output of some minerals were offset by losses in others.

This issue also presents an article entitled "Resource Sector Comparisons, 1989, 1990 and 1991 – Mineral, Energy and Forestry Sectors," which provides a comparison in terms of selected economic indicators: industry output, capital investment and repair expenditures, exports, imports, and employment. These comparisons illustrate the relative significance of the individual sectors, as well as the high level of their combined contribution to the economy. In 1991, the most recent year of the review period, the mineral sector (defined to include nonfuel minerals and coal) accounted for 4.4% of Canada's GDP, 2.8% of employment, 5.6% of capital investment and repair expenditures, and 17.1% of domestic exports. The three sectors together represented 15.1% of GDP, 8.4% of employment, 25.9% of capital and repair spending, and 42.5% of domestic exports.

A brief review of Canadian exploration expenditures is presented in the article entitled "Exploration Expenditure Statistics, 1991-93." An accompanying table provides a breakdown of exploration spending by province and territory, including final data for 1991, preliminary estimates for 1992, and forecast expenditures for 1993.

The Calendar of Events appears on page 4 of this issue. Readers wishing to contribute items for the calendar in future issues of this publication are encouraged to contact our office. (Please refer to the information contact point on page vii for name, address and telephone number.)

Notes

MINERAL OUTLOOK CONFERENCE

The next Mineral Outlook Conference will be held on Wednesday, May 4, 1994, in the Toronto Convention Centre. It will be held in conjunction with *Toronto '94*, "Canada's largest mining show ever," and will be sponsored by the Mineral Policy Sector of Energy, Mines and Resources Canada, The Mining Association of Canada, the Mineral Economics Society, and the Canadian Institute of Mining, Metallurgy and Petroleum.

As a consequence of the timing of *Toronto '94*, no Mineral Outlook Conference will be held during 1993. We look forward to welcoming our clients at *Toronto '94* where they will have the choice of either registering for the Mineral Outlook Conference as a one-day event (and having the opportunity of visiting the trade show on that day) or registering for the entire three-day *Toronto '94* event. Brochures and registration forms will be available shortly. In the meantime, information can be obtained from:

Robert Clark
Mineral Policy Sector
Energy, Mines and Resources Canada
460 O'Connor Street, Room 726
Ottawa, Ontario
K1A 0E4

Telephone: (613) 996-3286
Facsimile: (613) 943-8453

CANADIAN MINERALS YEARBOOK, REVIEW AND OUTLOOK, 1992

The 1992 edition of the *Canadian Minerals Yearbook* reports on the activities of the mineral and metal industry over the past year, identifies the predominant economic events of 1992, and indicates the major trends in the Canadian economy.

The leading chapter of the Yearbook provides a general review of the Canadian economy and the performance of the mineral industry during the year. Separate chapters address the regional and international scenes; labour and employment; mine reserves, developments, and promising deposits; mineral exploration; and mine openings and closures.

The Yearbook's 37 commodity chapters form the major part of this publication. The subject matter spans all stages of industry activity through mining and processing to prices, trade, production, consumption, and recycling. An outlook of the industry's future is also provided.

The statistical summary contains over 80 tables which provide statistical data on production; trade; consumption; prices; principal statistics; employment, salaries and wages; mining, exploration and drilling; transportation; and investment and finance.

Copies of the Yearbook can be purchased from the Canada Communication Group – Publishing, telephone: (819) 956-4802, and associated bookstores for C\$42.50 plus \$5.40 for shipping and handling.

ASBESTOS – NEW PUBLICATION

The Mineral Policy Sector has recently released a new publication entitled *Controlled Use: A Case Study of Asbestos and Possible Future Application to Potentially Dangerous, Industrially Important Minerals*.

Asbestos is a useful material, not least because it is chemically inert. It does not react easily with other substances and is not easily damaged or destroyed. When it was first used, asbestos was thought to be biologically inert in its effects on the human body. We now know that this is not the case.

This paper attempts to present the scientifically based, international consensus on the risks of asbestos, as well as to enumerate possible linkages for the application of controlled use from asbestos to other fibres and other industrially important, potentially dangerous materials (*such a linkage is not beyond the realm of possibility given that the chemical industry has launched a program of "Responsible Care"*).

Copies of this publication can be obtained from:

Publications Distribution Office
Mineral Policy Sector
Energy, Mines and Resources Canada
460 O'Connor Street
Ottawa, Ontario
K1A 0E4

Telephone: (613) 992-1108

MPS PUBLICATIONS DISTRIBUTION OFFICE

The Mineral Policy Sector of EMR prepares a number of information products including regular and special publications, posters and other material. These can be obtained from:

Publications Distribution Office
Mineral Policy Sector
Energy, Mines and Resources Canada
460 O'Connor Street
Ottawa, Ontario
K1A 0E4

Telephone: (613) 992-1108

ELECTRONIC DISTRIBUTION OF PUBLICATIONS

The Mineral Policy Sector is investigating the electronic distribution of this and other sector publications. If you have access to a link on the Internet and would, at some future date, prefer to receive this publication electronically, then send a message to:

bmccutch@emr.ca

Please state in the body of the message whether you would be interested in receiving this particular publication electronically.

If you have an account on another network (such as Compuserve), you may still be able to receive mail from the Internet. Contact your representative to obtain information on how to send a message to Internet users. You may also wish to enquire about the charges you will incur for receiving publications (such as the charge per kilobyte).

Please remember that we have not yet established a system to distribute information electronically. Your interest will be recorded, however, and will be used in making future publication decisions.

HIGHLIGHTS OF RECENT MINERAL INDUSTRY PUBLICATIONS BY STATISTICS CANADA

Statistics Canada has recently released a publication of interest to the mineral industry.

Canada's Quarries and Sand Pits – 1991

Catalogue no. 26-225

In 1991, the value of production by establishments classified as Quarries and Sand Pits decreased by 16.9% to \$699.9 million from \$842.1 million in 1990.

Total employment in these establishments in 1991 was 5026, down by 14.5% from the 5881 recorded in 1989 and by 6.5% from the 5376 recorded in 1990. The number of production and related workers was 3644 compared to 3966 in 1990. Total wages of those employed in these establishments was \$179.7 million, a decrease of 7.4% from 1990. Of this amount, production and related workers earned \$126.0 million.

The total value of structural materials produced by all establishments in Canada regardless of industrial classification was \$2401.4 million, a decrease of 14.1% from the \$2796.4 million registered in 1990. Of this amount, a total value of \$119.8 million of clay products, \$810.8 million of cement, \$193.5 million of lime, \$737.7 million of sand and gravel, and \$539.6 million of stone was produced.

Total shipments of stone valued at \$589.2 million were made from Canadian quarries in 1991, a 17.1% decrease from the \$710.6 million recorded in 1990. Of this total value shipped, 70.9% was limestone, 21.2% was granite, 3.4% was sandstone, 3.2% was marble, and 1.3% was shale. A total of 100.4 million tonnes (Mt) of stone was shipped in 1991, down by 20.8% from the 126.7 Mt shipped in 1990.

To order a Statistics Canada publication, telephone 1-613-951-7277 or use facsimile number 1-613-951-1584. For toll-free, in Canada only, telephone 1-800-267-6677. When ordering by telephone or facsimile, a written confirmation is not required.

CALENDAR OF EVENTS

Date	Event	Contact
August 23, 1993	International Congress on Mine Design Kingston, Ontario	Peter Scott Queen's University Tel.: (613) 545-2212
August 28 to September 2, 1993	CIM 32nd Annual Conference of Metallurgists and Trade Show Québec City, Quebec	Louisa Davis Metallurgical Society of CIM Tel.: (514) 939-2710
September 12 to 15, 1993	50th Mines Ministers' Conference Fredericton, New Brunswick	Don Carroll Tel.: (506) 453-2206
To be announced	3rd Annual Field Conference Bathurst, New Brunswick	Jayanta Guha Geological Society Tel.: (418) 545-5404
September 18 to 21, 1993	40th Canadian Conference on Coal Whistler, British Columbia	Coal Association of Canada Tel.: (403) 262-1544
October 10 to 13, 1993	Zinc '93 Hobart, Tasmania Australia	Judy Webber AusIMM CIM Tel.: 03-347-3166
October 31 to November 3 1993	24th APCOM Symposium Montréal, Quebec	J. Elbrond CIM Tel.: (514) 340-4923
November 22 to 23, 1993	21st Geoscience Forum Whitehorse, Yukon	Yukon Chamber of Mines Tel.: (403) 667-2090
November 24 to 26, 1993	Geoscience Forum Yellowknife, Northwest Territories	Northwest Territories Chamber of Mines Tel.: (403) 873-5281
May 1 to 4, 1994	Toronto '94, Toronto, Ontario	Jackie Luke (Toronto) Tel.: (416) 622-3130 John Gaydos (Montréal) Tel.: (514) 939-2710 Ron Ganton (Vancouver) Tel.: (604) 274-9091
May 4, 1994	Mineral Outlook Conference Toronto, Ontario	Robert Clark Mineral Policy Sector Energy, Mines and Resources Canada Tel.: (613) 996-3286 Fax: (613) 943-8453

Reviews

General Review of the Mineral Industry in 1992

A.B. Siminowski

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Telephone: (613) 943-8096*

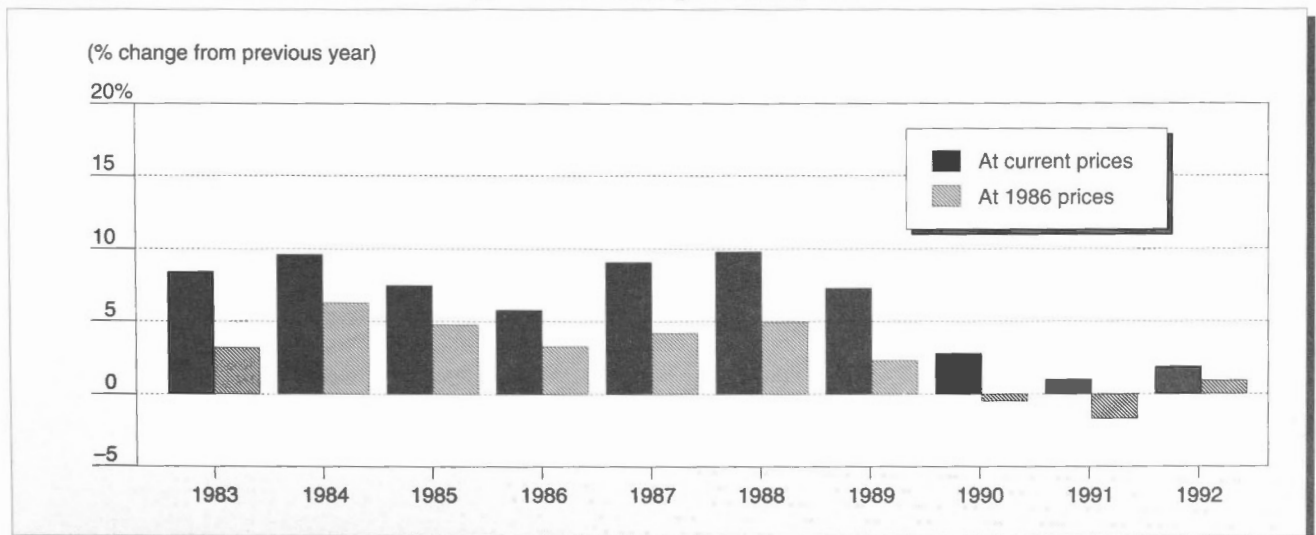
THE CANADIAN ECONOMY IN 1992

In 1992, Canada's Gross Domestic Product (GDP) grew by an estimated 0.9%. This was a very modest gain in light of the reduced economic output that was recorded in each of the two previous years (-0.5% in 1990 and -1.7% in 1991). Throughout the year, merchandise exports were the major source of strength to an otherwise struggling Canadian economy. Increased housing construction activity also helped to sustain the recovery during 1992.

The 1992 recovery could simply be described as weak and agonizingly slow, particularly to the 1.6 million Canadians who found themselves unemployed. Surprisingly to some, perhaps, economic output has actually been increasing since the second quarter of 1991, albeit at a very modest and uneven pace, and with only marginal growth at times. Approaching the end of 1992, however, the Canadian economy was still operating below the level at which it entered the recession in April 1990.

As in 1991, the economy continued to be held down by high unemployment, weak spending by consumers, plant layoffs and closings, depressed levels of investment in non-residential building construction, and record numbers of business and personal bankruptcies. As the year progressed, however, there was encouraging improvement in some sectors of the economy. After slowing down somewhat in the second quarter, the pace of economic growth picked up again in the third quarter, its best quarterly advance in over a year.

Figure 1
Trends in Canadian Economic Activity, Percent Change in GDP, 1983-92



NOTE: Data for 1992 are estimated.
SOURCE: Statistics Canada.

Consumer spending grew 0.9% in real terms in the third quarter after 0.3% growth in the second quarter and no net advance in the previous three quarters. This increased pace of spending reflected an upturn in personal disposable income since the beginning of the year, improved consumer confidence and lower interest rates. Nevertheless, caution due to high unemployment and the burden of high consumer debt continued to have a moderating effect on consumer expenditures for goods and services.

On a positive note, the continuing drop in mortgage interest rates, along with special government home ownership programs, helped to stimulate the home-building sector. The total number of housing starts for the year was estimated at 168 000, an increase of 7.7% over the 1991 level of 156 000.

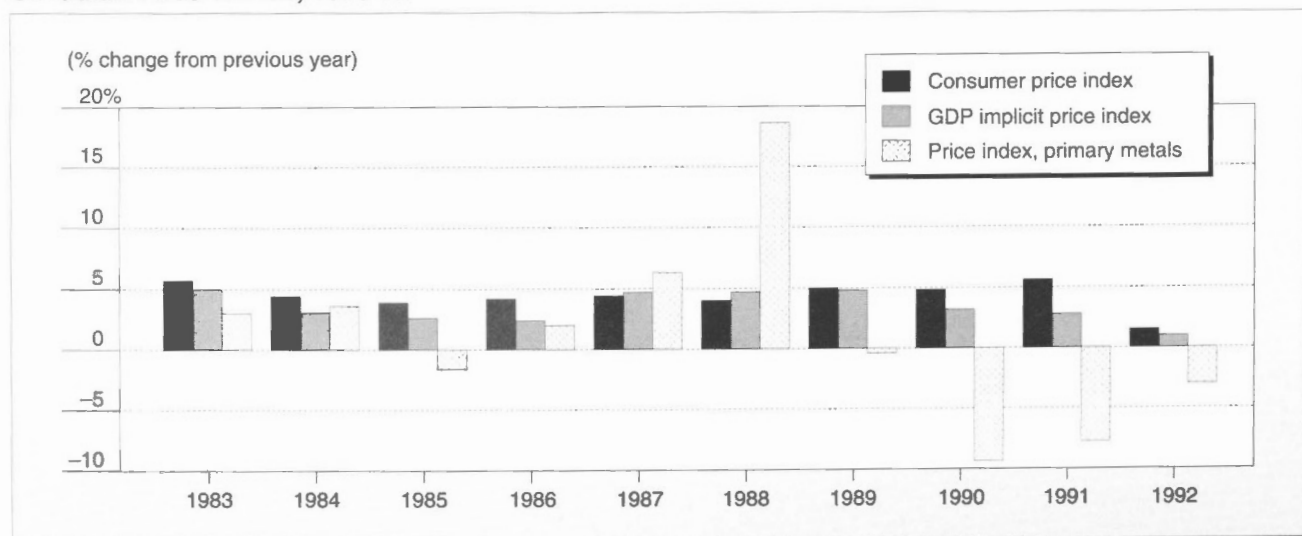
The overall pace of economic improvement was not sufficient to prevent the unemployment rate from increasing over the course of the year. In November, the jobless rate rose to a high of 11.8%. This was the highest rate recorded in over nine years and represented 1 645 000 Canadians who were looking for work. For the year overall, the unemployment rate averaged about 11.3% compared to 10.3% in 1991. At year-end, there were about 156 000 more unemployed than in December 1991. As the economy improved, more and more people re-entered the labour force looking for work.

During the latter half of the year, the overall level of employment in the country increased steadily but moderately. Despite the increase, total employment by December was little changed from a year earlier, although employment in the goods-producing sector was still down by about 2.0%. Statistics Canada reported that the average employment over the year was 12.2 million, down 100 000 from 1991 and down 331 000 from its peak in 1990.

The rate of inflation as measured by changes in the Consumer Price Index (CPI) remained well below 2% on an annual basis throughout the year, except for the last month. With little inflationary pressure from an economy still coping with an underlying weakness, the rate fell as low as 1.1% in June. For the year overall, the rate of inflation averaged 1.5%, the lowest rate in 30 years.

Short-term interest rates followed a general downward trend for much of the year with the Bank of Canada rate and the prime lending rate of the chartered banks both hitting 20-year lows early in September. The prime rate dropped to 6.25%, while the central bank rate bottomed out at 4.93%. In the following months, however, interest rates became extremely unstable, reflecting volatile conditions in international currency markets as well as political uncertainties over Canada's constitutional referendum.

Figure 2
Canadian Price Trends, 1983-92



NOTE: Data for 1992 are estimated.

SOURCE: Statistics Canada (based on 1986 price indexes = 100).

The Canadian dollar also followed a downward trend, falling by about 10% relative to the U.S. dollar over the course of the year. It hit a low of US77.7¢ in November, its lowest level in almost five years. Only one year earlier, the dollar had been trading at more than US89¢. When the Canadian dollar stabilized in the range of 78-79¢ late in the year, short-term interest rates began to decline once again.

Capacity utilization rates in the non-farm goods-producing sector of the economy averaged 77.8% during the first nine months of the year. This compares with the average rate of 80.7% for the period since 1981. In the manufacturing sector, capacity utilization averaged only 74.2% during the first nine months of 1992.

Investment in non-residential building construction continued to decline. In general, poor profit levels, low capacity utilization rates and weak corporate balance sheets have inhibited investment in building construction. Business investment in machinery and equipment, however, managed to follow an upward trend since the beginning of the year. Outlays for machinery and equipment advanced by 6.8% in real terms in the third quarter.

Throughout the course of the year, merchandise exports were a major source of strength to an otherwise struggling Canadian economy. Exports and imports advanced to new highs as the year progressed. For the full year, Canada's exports rose by 11.2% to \$157.5 billion, reflecting the impact of a low-priced Canadian dollar and an improving U.S. economy. Merchandise imports rose by 8.9% over the same period to \$148.1 billion. On balance, Canada recorded a merchandise trade surplus of \$9.5 billion in 1992 compared to \$5.8 billion in 1991.

With approximately three quarters of Canada's merchandise exports going to the United States, the performance of the U.S. economy has a major impact on Canada's economic well-being. As in Canada, the U.S. economy also followed a cautious path of recovery during the year, although it did manage to achieve stronger gains than the Canadian economy. In the last quarter of the year, GDP in the United States grew at an annual rate of 3.8%, its strongest advance in four years. For the year in total, real GDP in the United States was estimated to have grown by 2.1%, a relatively weak performance, but its strongest since 1989.

THE MINERAL INDUSTRY IN 1992

Although mineral fuels are normally included in the overall value of Canada's mineral production,

the main focus of this review is the nonfuel sector of the mineral industry, plus coal. Mineral industry activities encompass more than just the production of basic ores and concentrates, as the output from mining and concentrating becomes the input for subsequent processing. In addition, activities associated with mineral recycling are an important and integral part of mineral industry operations. In broad terms, the industry is often described in terms of four stages of processing activity which are defined as follows:

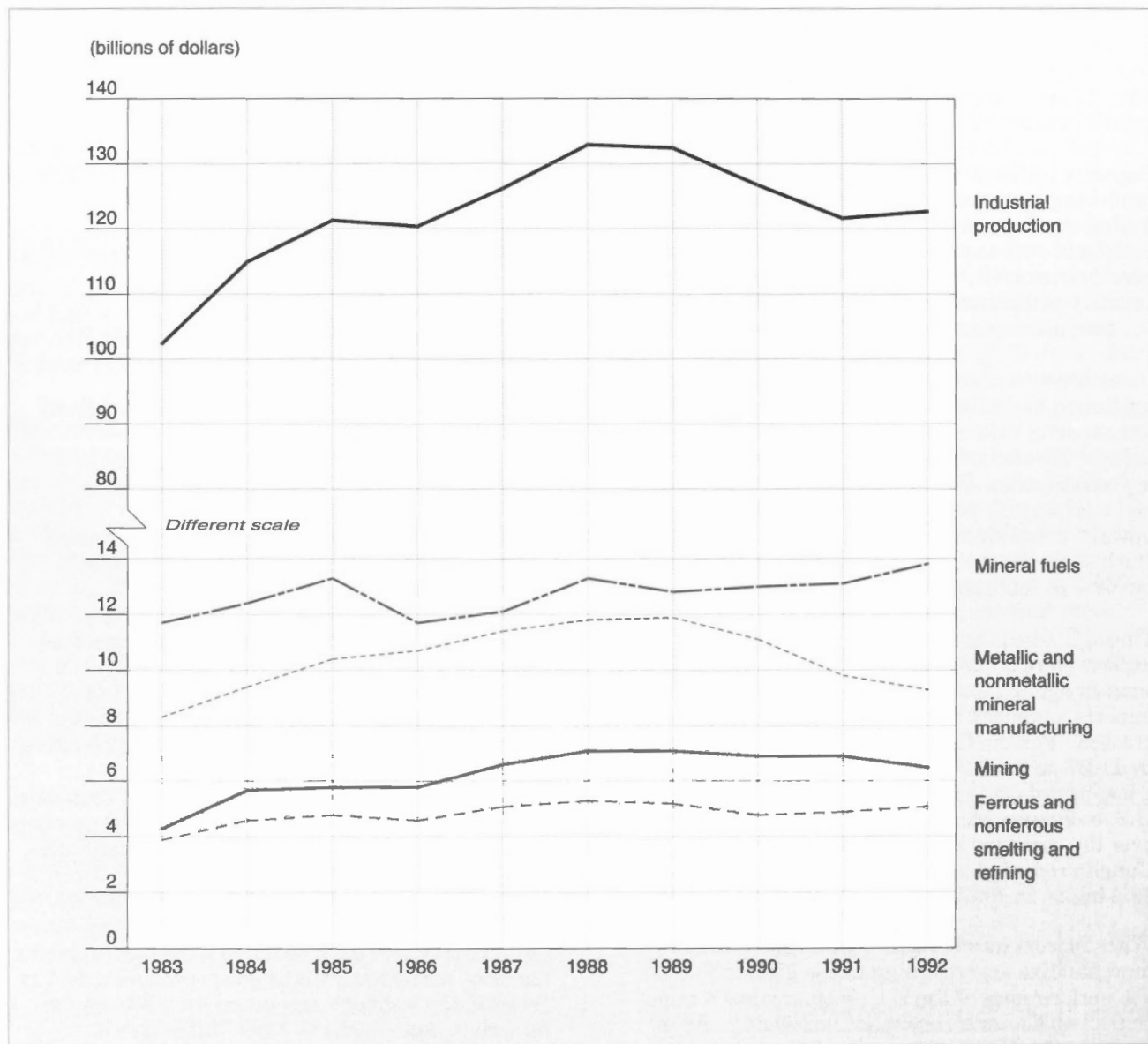
- Stage I – Primary Mineral Production (mining and concentrating);
- Stage II – Metal Production (smelting and refining);
- Stage III – Minerals and Metals-Based Semi-Fabricating Industries; and
- Stage IV – Metal-Fabricating Industries.

Including all four stages of activity, the mineral industry accounted for about 4.2% of Canada's GDP in 1992 (including the coal and uranium industries, but excluding oil and natural gas). The mining and concentrating stage alone accounted for about one third of mineral industry GDP. In 1992, the mineral industry overall contributed about \$21.0 billion (at 1986 prices) to Canada's GDP, a decrease from the 1991 level of \$21.6 billion.

Total employment in the mineral industry continued the decline which began in 1989 when the number of jobs peaked at 422 000. Preliminary estimates for 1992 indicated that total employment in the industry was about 338 000, down 3.7% from 351 000 in 1991. This decrease reflected the fragile state of the economy and the continued weakness in labour markets, particularly in the goods-producing sectors. Overall, the industry accounted for 2.8% of total national employment in 1992. All stages of the mineral industry experienced a decline in employment from the previous year.

The total number of employees in Stage I (metal mining, nonmetal mining, quarrying and coal mining) was estimated at 64 000, down from 69 000 in 1991. In addition, there were approximately 8600 people employed in diamond drilling and other services incidental to mining operations in 1992. Employment in Stage II (nonferrous smelting and refining and the primary steel industries) was estimated at 58 000, down from 64 000 in 1991.

Employment in Stages III and IV (semi-fabricating and fabricating mineral industries) fell from 218 000

Figure 3**Gross Domestic Product at Factor Cost at 1986 Prices, 1983-92**

NOTE: Data for 1992 are estimated.

SOURCE: Statistics Canada.

in 1991 to 216 000 in 1992. Total employment in Stages I and II fell by 8.3% compared with 0.9% for Stages III and IV combined. The semi-fabricating and fabricating industries, however, had recorded a 13.0% decline in the previous year compared to 7.3% for the mining, smelting and refining industries.

The capacity utilization rate in Canada's mining industries, including quarrying, was down slightly from the previous year. The rate was fairly steady

at about 86% during the first three quarters of 1992, averaging 86.3% over this period compared to 88.1% for the corresponding period in 1991.

The capacity utilization rates in mineral-based manufacturing industries also remained fairly constant, but relatively low, during the first three quarters of the year. Capacity utilization in the primary metal industries was 78.4% in the third quarter of 1992. Compared to a year earlier, this

was down from 82.7% in the third quarter of 1991. Fabricated metal products industries operated at 66.0% of capacity in the third quarter of 1992, down from 68.7% a year earlier. Capacity utilization in the nonmetallic mineral products industries was 65.0% in the third quarter of 1992 compared to 66.8% in the third quarter of 1991.

Capital expenditure intentions by the mineral industry (excluding the petroleum and natural gas industries) totalled \$3.7 billion for 1992. This level of spending, which reflected revised investment intentions released in mid-year by Statistics Canada, represented a decrease from the \$4.9 billion spent in 1991 on construction, machinery and equipment. Most of this decrease was expected to occur in the nonferrous smelting and refining industries in which capital outlays were projected to decline from \$1.7 billion in 1991 to \$0.8 billion in 1992. Capital spending intentions in the mining sector of the industry totalled \$1.7 billion for 1992 compared to \$1.9 billion in 1991. Including repair expenditures, total investment spending planned by the mineral industry overall was \$8.0 billion in 1992 compared to \$9.1 billion a year earlier. This level of spending represented 4.9% of total capital and repair expenditures within the Canadian economy, down from 5.6% in 1991 and 6.2% in 1990.

Research and development (R&D) spending intentions by the mineral industry (excluding the petroleum and natural gas industries) totalled \$318 million for 1992, an increase from \$305 million in 1991. This level of R&D spending represented 6.0% of total R&D expenditures planned by Canadian industries in 1992. Metal mines were expected to account for 19% (\$60 million) of mineral industry R&D spending in 1992, an increase of \$5 million over the previous year. Spending intentions of the primary metal manufacturing industries (ferrous and nonferrous) represented 61% (\$194 million) of the mineral industry R&D total for 1992, an increase of \$4 million over 1991.

Total spending on exploration for nonfuel minerals in 1992 was expected to fall as low as \$420 million, compared to \$532 million in 1991 and \$775 million in 1990. The 1992 estimate was lower than the \$498 million of intended exploration spending indicated by federal-provincial surveys carried out early in the year. In constant dollar terms, Canadian mineral exploration expenditures in 1991 and 1992 were the lowest since the mid-1970s.

MINERAL PRODUCTION

Preliminary estimates show that the total value of production of all mineral commodities, including

mineral fuels, increased from \$35.2 billion in 1991 to \$35.4 billion in 1992, a gain of 0.6%. Of the four mineral commodity groups (metals, nonmetals, structural materials and fuels), mineral fuels recorded the only increase in the overall value of output, as shown in the following table:

**THE CANADIAN MINERAL INDUSTRY
VALUE OF PRODUCTION, 1991 AND 1992**

	1991	1992 ^P	Change
	(\$ millions)		(%)
Metals	10 473.1	10 209.2	-2.5
Nonmetals	2 381.7	2 199.4	-7.7
Structurals	2 405.1	2 184.1	-9.2
Total			
Nonfuel	15 259.9	14 592.6	-4.4
Fuels	19 945.3	20 818.9	4.4
Total	35 205.2	35 411.5	0.6

Sources: Energy, Mines and Resources Canada; Statistics Canada.

^P Preliminary.

Note: Numbers may not add to totals due to rounding.

A gain of approximately \$874 million in the total value of mineral fuels production was partially offset by a decline of \$667 million in the total value of nonfuel mineral production, as commodity prices generally remained low. EMR's Metal Price Index, which tracks the monthly prices of copper, nickel, lead, zinc, gold and silver, followed an upward trend through to mid-year, but then began to decline. Although the index turned upward again in December, by that time it was lower than at any time since 1987. The average annual prices for five of the six metals in the index were lower in 1992 than in 1991. Only the average price for zinc was higher on the basis of mid-year strength.

In comparison to the value of production in 1991, the results for individual commodities were mixed, as advances in the value of output of some minerals were offset by losses in others. Gains in the overall value of production were led by crude petroleum (+\$795 million), zinc (+\$342 million) and natural gas (+\$214 million). Declines were led by gold (-\$263 million), coal (-\$254 million) and elemental sulphur (-\$204 million).

Excluding mineral fuels, the overall value of production declined from \$15.3 billion in 1991 to \$14.6 billion in 1992, a decrease of 4.4%. Nonfuel minerals accounted for 41.2% of the total value of Canada's

mineral production in 1992 (metals, 28.8%; non-metals, 6.2%; and structural materials, 6.2%).

The total value of metallic mineral production fell by 2.5% from \$10.5 billion in 1991 to \$10.2 billion in 1992. Gold and copper continued to be the two leading metals in Canada on the basis of their overall values of production, although both metals had recorded reduced levels of output. Gold and copper production were each valued at about \$2.1 billion.

Zinc placed third among the metallic minerals on the strength of a 10.2% increase in production combined with a higher average price in 1992. In comparison to 1991, which saw a significant drop in zinc prices, the overall value of zinc production rose by 24.7% to \$1.7 billion in 1992. The value of nickel production followed closely behind, also at approximately \$1.7 billion. Total output of nickel remained essentially unchanged from the previous year. Nickel prices, however, followed a downward trend caused by weak international markets, high production levels and increased exports from Russia.

The value of output of the nonmetallics, including minerals such as asbestos, potash, salt and sulphur, declined from \$2.4 billion in 1991 to \$2.2 billion in 1992. Of the leading nonmetallics, potash and elemental sulphur recorded gains in production, while asbestos and salt recorded decreases.

The value of production of structural materials, including clay products, sand and gravel, stone, cement and lime, fell from \$2.4 billion in 1991 to \$2.2 billion in 1992. The continued weakness in non-residential construction activity resulted in lower production of structural material commodities.

The fuels sector includes crude petroleum, natural gas, natural gas by-products and coal. Together they accounted for 58.8% of the total value of Canada's mineral production in 1992. The value of mineral fuels output increased by 4.4% from \$19.9 billion in 1991 to \$20.8 billion in 1992. This gain of \$0.9 billion was attributable to increases in the values of production of crude oil (7.6%), natural gas (4.0%) and natural gas by-products (5.5%), and was partly offset by a decrease in the overall value of coal production (-13.2%). Although coal output declined in 1992, crude oil, natural gas and natural gas by-products all recorded gains in production levels.

Crude oil production increased by 4.7% to 94.0 million cubic metres (m³) in 1992, with a total value of \$11.3 billion. Natural gas output rose by 13.0% to 118.9 billion m³, with a value of \$5.6 billion. Natural gas by-products recorded a 6.6% increase in output to 26.6 million m³ valued at \$2.3 billion.

On a provincial basis, Alberta's contribution to total Canadian mineral output (including fuels) represented the largest share, amounting to \$17.1 billion, or 48.2% of the total in 1992. Ontario was second with a value of \$4.8 billion, or 13.5% of the total. British Columbia accounted for \$3.4 billion (9.7%), Saskatchewan for \$3.1 billion (8.6%), Quebec for \$2.6 billion (7.4%), and Manitoba for \$1.1 billion (3.2%). The other provinces and the territories accounted for the remaining 9.4%.

The top ten commodities in terms of value of output in 1992 were: crude petroleum (\$11.25 billion), natural gas (\$5.61 billion), natural gas by-products (\$2.30 billion), gold (\$2.09 billion), copper (\$2.06 billion), zinc (\$1.73 billion), nickel (\$1.68 billion), coal (\$1.66 billion), iron ore (\$1.13 billion) and potash (\$0.96 billion).

MINERAL TRADE

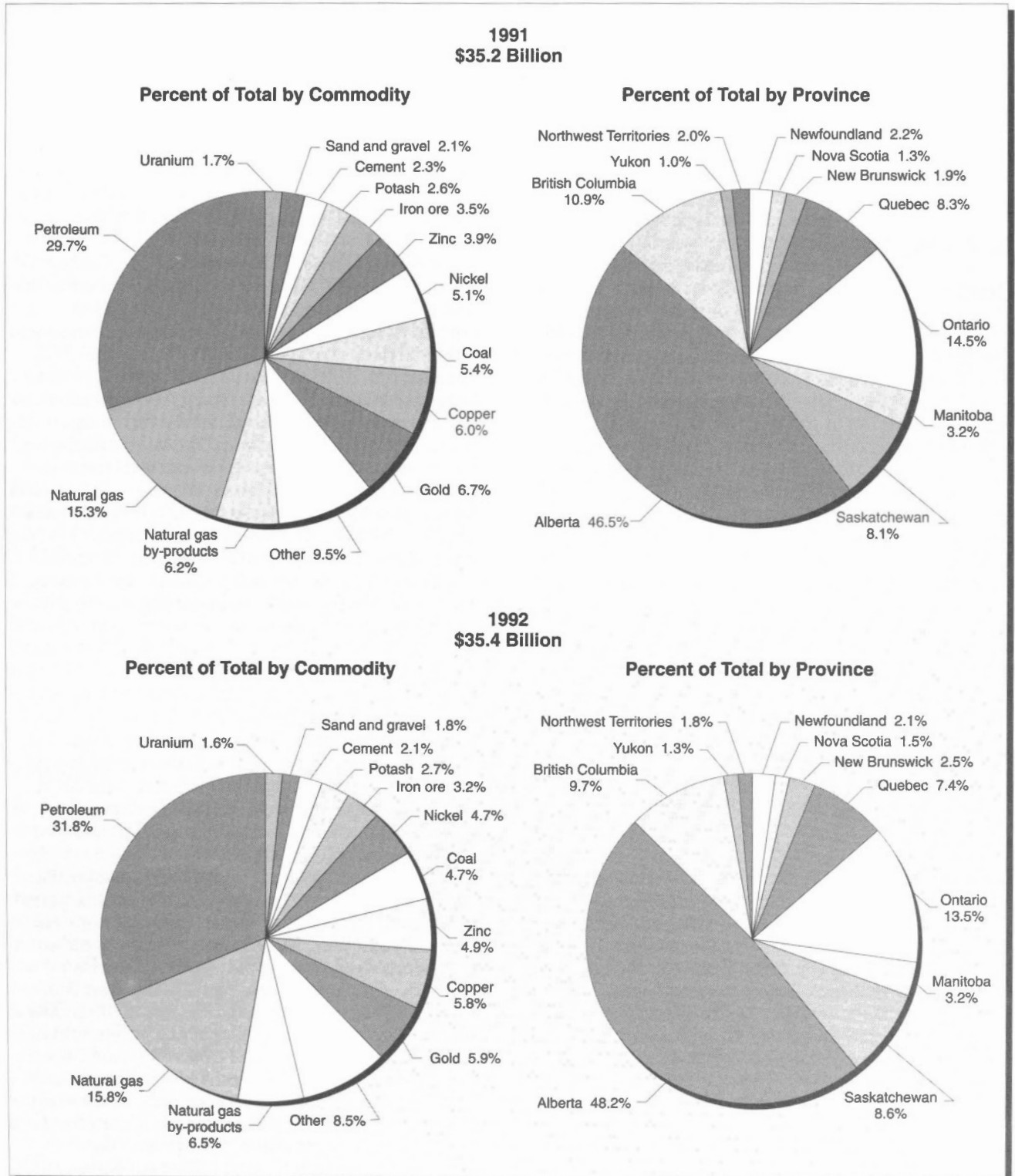
Nonfuel Minerals and Mineral Fuels

The mineral industry continued to make a significant contribution to Canada's merchandise balance of trade. Mineral and mineral product exports, including fuels, totalled \$29.1 billion for the first three quarters of 1992, an increase of 4.6% over the corresponding period in 1991. Over the first nine months of the year, 73.2% of total mineral exports went to the United States, 8.6% went to the European Community and 6.4% went to Japan. Mineral and mineral product exports represented 25.8% of total domestic exports.

Imports of minerals and mineral products, including fuels, for the first three quarters of 1992 totalled \$14.3 billion, or 13.0% of total Canadian imports. In terms of net trade, a surplus of approximately \$14.8 billion was recorded for minerals and mineral products during the first three quarters of 1992. Preliminary estimates indicated that the surplus for the full year was almost \$20 billion.

Nonfuel Minerals and Coal

The total value of exports of nonfuel minerals and coal was estimated at \$18.4 billion for the first nine months of 1992, an increase of 3.5% over the corresponding period in 1991. These exports included crude minerals, smelted and refined products, semi-fabricated and fabricated forms, as well as waste and scrap for recycling. Overall, they represented 16.4% of Canada's total domestic exports. The United States received 58.8% of Canada's

Figure 4**Value of Mineral Production, Percent Shares by Commodity and by Province, 1991 and 1992**

NOTE: The provincial shares may not add to 100% due to rounding and the exclusion of Prince Edward Island's share as it is too small to be expressed.
 SOURCES: Statistics Canada; Energy, Mines and Resources Canada.

exports of nonfuel minerals and coal, the European Community received 13.3% and Japan received 9.9%.

Imports of nonfuel minerals and coal for the first nine months of the year were valued at \$10.2 billion, or 9.3% of total Canadian imports. On balance, this resulted in a trade surplus for nonfuel minerals and coal of more than \$8.2 billion for the first three quarters of 1992. It was estimated that the surplus for the full year was approximately \$11 billion.

LEADING MINERALS

Gold

Canada is the world's fifth largest producer of gold. For 1992, gold production in Canada was estimated at 157.6 t, a decrease of 10.5% from the record level of 176.1 t in 1991. The decrease in gold production was the result of a number of mine closures, as well as reduced output at several other operations. Gold prices remained low and traded within a relatively narrow range between US\$330 and US\$359 per troy ounce (oz) in 1992. The average price for the year was US\$344/oz, down from US\$362/oz in 1991; this was its lowest level since 1985. With total output valued at \$2.09 billion in 1992, gold remained Canada's leading metal in terms of overall value of production, but only slightly ahead of copper. The current economic slowdown, low inflation rates and high real interest rates are factors that will tend to keep gold prices near their prevailing levels. Assuming prices stay close to current levels, or even weaken, Canadian gold production would be expected to decline further.

Copper

Canada ranks fourth in the world in the mine production of copper. Shipments of recoverable copper from Canadian mines in 1992 declined by 4.6% to 745 000 t from 780 000 t in 1991. Copper production declined as a result of a mine closure in British Columbia as well as reduced output at some locations, particularly in Quebec. The overall value of shipments was \$2.06 billion. World copper prices remained relatively strong in 1992, despite some build-up of inventories. Western World demand for copper in 1992 was about the same as in 1991. The market was buoyed by expectations that demand would strengthen in the coming year. The threat of serious supply disruptions in a number of major copper-producing areas also helped to support copper prices. Prices averaged US\$1.04/lb on the London Metal Exchange (LME) in 1992 compared

to US\$1.06/lb in 1991. Since the North American recovery is progressing rather slowly, and since other major economies in the world are still weak, there is likely to be some further easing of copper prices in the first half of 1993.

Nickel

Canada is the world's second largest producer of nickel, topped only by Russia. Nickel mine shipments increased by 0.5% to 189 000 t in 1992 from 188 000 t in 1991. As a result of weak nickel prices, however, the value of shipments fell by 7.1% to \$1.68 billion. Demand for nickel in the Western World declined by about 9%. This, in combination with high levels of production and increased exports from Russia, resulted in lower prices for nickel. Prices averaged US\$3.18/lb on the LME, compared to US\$3.70/lb in 1991. Production cuts announced in the third quarter by Inco Limited and Falconbridge Limited helped to stem the downward price slide in world nickel markets. Stainless steel demand, which accounts for over 60% of nickel consumption, declined in Europe and Japan. A recovery in these two markets does not seem likely this year, although U.S. demand in this sector is forecast to increase as the American economy improves. Nickel prices are expected to remain depressed until world supply is brought back into line with demand.

Zinc

Canada is the world's largest producer of zinc concentrates. Shipments from Canadian zinc mines rose by 10.2% to 1.19 Mt in 1992 from 1.08 Mt in 1991. Labour disputes in 1991 had adversely affected production. Zinc prices in 1992 remained strong throughout much of the year despite continued weak global demand and rising stock levels. Speculative trading on the LME during this period added volatility to zinc prices. In October, prices began to fall in response to poor market conditions and a decreased threat of strikes at Canadian smelters. Zinc prices averaged US\$56¢/lb on the LME in 1992 compared to US\$51¢/lb in 1991. The combination of increased Canadian production and higher zinc prices led to a 24.7% increase in the overall value of shipments to \$1.73 billion in 1992. World demand for zinc is expected to increase in 1993, particularly for galvanizing applications, as a modest economic recovery takes place. However, significant exports by Eastern Bloc countries are expected to result in a substantial surplus of zinc metal. Prices are expected to weaken before recovering late in the year.

Lead

Canada ranks fifth in the world in the mine production of lead. Shipments of recoverable lead in ores and concentrates from Canadian mines increased by 28.4% to 319 000 t in 1992 from 248 000 t in 1991. The value of shipments increased by 9.5% to \$231 million. Lead inventories rose in 1992 as world demand weakened and as supplies increased from other countries. Lead prices weakened in the last quarter, falling to a six-year low of US\$20.2¢/lb on the LME. The average price for the year, however, was US\$24.6¢/lb, only slightly lower than the 1991 price of US\$25.3¢/lb. An increasing surplus of world supply is projected, resulting in rising inventories and downward pressure on prices.

Silver

Canada ranks fourth in the world in the mine production of silver. In Canada, silver is produced as a by-product or co-product of base-metal or gold mining. Shipments of silver fell to an estimated 1147 t in 1992, a decrease of 9.0% from the 1991 level of 1261 t. This reduction was the result of mine closures as well as declining production at some mines. The overall value of shipments fell by 7.7% to \$173 million. The price of silver has been declining over the past decade due to a combination of relatively weak demand and the increased production of silver. Silver prices averaged US\$3.95/oz in 1992, a slight decrease from \$4.06/oz in 1991. The price of silver is expected to remain essentially unchanged or to fall slightly in 1993 as investor demand and world economies remain weak.

Iron Ore

Iron ore shipments fell from 35.4 Mt in 1991 to 32.8 Mt in 1992, a decrease of 7.5%. Correspondingly, the overall value of shipments declined by 8.0% to \$1.13 billion. This was the lowest level of shipments recorded since 1983. It was estimated that Canadian exports were also at their lowest level since 1983. Use of iron ore in Canadian blast furnaces remained low for the third year in a row, although the use of domestic ores increased by 11% over 1991. Canada ranks seventh in production among world producers of iron ore. The world steel industry is forecast to remain flat in 1993 and negotiations for shipments of iron ore are expected to be difficult because of announced demands by steelmakers for lower iron ore prices.

Asbestos

Shipments of asbestos were estimated at 601 000 t in 1992, a decrease of 12.4% from the 1991 level of

686 000 t. The value of shipments declined by 13.0% to \$236 million. The decrease in asbestos output resulted from the closure of a mine in British Columbia, as well as reduced production at a mine in Quebec in order to concentrate on mine development. Canada is the world's second largest producer of asbestos. International regulatory issues associated with asbestos and the ongoing debate surrounding its use have had an adverse impact on world markets for asbestos products. However, the overturn by U.S. courts in 1991 of the 1989 asbestos ban rule of the U.S. Environmental Protection Agency has had a positive effect on the Canadian industry, as the negative trend in exports to the United States has moderated. Asia remains a major market for Canadian production, while gains are expected in South America.

Potash

Shipments of potash remained at the 7-Mt level in 1992, with a total value of approximately \$960 million. Canada is the world's second largest producer of potash, exceeded only by the countries of the former Soviet Union (FSU). Canada is by far the largest exporter of potash, accounting for about 40% of world trade in that commodity. World potash demand was weak in 1992. In particular, the collapse of fertilizer consumption in the FSU and Eastern Europe continued to have a negative impact on the world's demand for potash. Strong demand prevailed in the United States, however, leading to an estimated 10% increase in Canada's potash exports to that country in 1992. World potash supply continues to face overcapacity. Canada's potash industry has been operating at rates between 50% and 60% over the last three years and is expected to continue to be the swing supplier.

Coal

Coal production fell to 64.6 Mt in 1992, a decline of 9.3% from the 1991 record level of 71.1 Mt. The overall value of coal production fell to \$1.66 billion compared to \$1.92 billion in the previous year. The decline in coal output was the result of production problems at three of the major coal mines in British Columbia, reflecting problems of restructuring within the industry as well as labour difficulties. Production in British Columbia, Canada's largest coal producer, fell by 32.1% in 1992. Canada's coal output is expected to increase in 1993. Canada is one of the world's leading exporters of coal, ranking fourth in 1991. World coal trade is expected to become more competitive than before, with an increased supply of low-cost coal putting downward pressure on prices.

Structural Materials

The total value of structural materials production declined to \$2.18 billion in 1992 from \$2.41 billion in 1991, a decrease of 9.2%. Increased housing activity provided some stimulus to the industry as the number of housing starts increased by almost 8% in 1992. However, non-residential building activity, as well as engineering construction work (such as in building roads and bridges), continued to be very weak. Consequently, in 1992, the industry recorded lower shipments of primary construction materials such as cement, stone, sand and gravel.

CHALLENGES FOR THE INDUSTRY

International Competitiveness for Mineral Investment

With increasingly severe competition in the global mineral economy, the Canadian industry faces its toughest challenge yet. Canada's position as a leading source of base metals has become jeopardized as base-metal reserves have been declining since the early 1980s. These reserves are not likely to be replaced in the near future if Canada does not reverse the significant decline in mineral exploration spending that has taken place over the past several years. Aggressive promotion by other mineral-rich countries has prompted many Canadian companies to shift their focus to mineral development opportunities elsewhere in the world. In the wake of political and economic reforms in Latin America and other developing regions of the world, there is serious concern that Canada may no longer be viewed as one of the prime areas for mineral investment. Indeed, the perception may be that the best and most promising opportunities actually lie in the development of known mineral deposits in other countries.

A decline in Canada's mineral industry would represent a significant loss to the Canadian economy. Such a loss would have a major impact on the many regional economies that depend on mining, milling, the smelting and refining industries, and other spin-off industries for their prosperity. What is required to prevent such an occurrence? What needs to be done to ensure that there is adequate investment in the Canadian mineral industry to sustain and develop this important sector of the Canadian economy? To address these concerns, a government/industry task force was established following the September 1991 Mines Ministers' Conference in Halifax, Nova Scotia, to review and

assess Canada's international competitiveness for mineral investment.

Because of the many complex factors that influence mineral investment decisions, the work of the task force involved a broad range of detailed studies, such as: trends and outlook in the competitive position of the Canadian mineral industry; trends in prices and the production of nonferrous metals; mineral exploration trends in Canada and the world; changing global competitiveness for mineral capital; and Canada's mineral taxation system. Thirteen background papers were prepared, along with a final report which summarized the findings and views of the task force. These reports were tabled for consideration at the September 1992 Mines Ministers' Conference held in Whitehorse, Yukon Territory.

The task force's summary report, entitled "The Canadian Mineral Industry in a Competitive World," identified three areas of particular concern that could have a major negative impact on Canada's long-term competitiveness for mineral investment:

- i) Environmental assessment, permitting and regulation: The potential for a negative impact on Canada's investment climate stems from uncertainty and unpredictability in the regulatory framework, the possibility of excessive delays and costs, excessive regulations and jurisdictional overlap, and the costs of up-front reclamation funds.
- ii) Land use: Restrictions on land access and uncertainties over security of tenure have created great concern for the mining industry.
- iii) Mineral taxation: Recent changes to the Canadian taxation system have somewhat eroded Canada's previous most-favourable standing among its international competitors.

Because of their complexity and the fact that conditions and circumstances are rapidly evolving, it was recommended in the report that these areas of concern and others be the focus of further research and analysis in 1993.

Whitehorse Mining Initiative

At the conclusion of the Whitehorse Conference, the Canadian mines ministers released a statement announcing the launching of the Whitehorse Mining Initiative. It was announced that "... the Ministers agreed, in response to a proposal from

The Mining Association of Canada, to begin a process to put into place a comprehensive initiative on the future of the mining industry." In its presentation on behalf of Canada's metal and mineral industries, The Mining Association of Canada (MAC) had identified similar concerns as those expressed in the task force report discussed above. Environmental matters, land use and taxation were cited as some of the main issues that are currently affecting the industry's competitiveness and growth. Concerns were also expressed about the public's negative perception of the mining industry.

It was noted by MAC that the time was ripe for governments, industry and other stakeholders to put together a coordinated and comprehensive plan of action . . . a plan with a common vision and mission. In response to these concerns, a steering committee of three mines ministers was established to oversee and coordinate the development of such a plan. Government and industry officials and representatives of special interest groups have since met to begin the process of making the Whitehorse Mining Initiative a reality. Reflecting its multi-stakeholder involvement, a 14-member planning committee has been established to represent federal/provincial governments, industry, labour, aboriginals and environmentalists.

The scope of the initiative is very broad. It will address the many issues that were identified in the MAC presentation and in the government/industry task force report on Canada's international competitiveness for mineral investment. It is anticipated that the subsequent findings and recommendations will help to guide governments and industry in taking the necessary action to reaffirm Canada's strong position in the mineral economy of the world.

OUTLOOK FOR 1993

Most forecasts at the beginning of 1992 indicated that growth in the Canadian economy would be in the range of 2%-4%, only about half of the historical rate of recovery from previous recessions. Despite the increase, economists did not expect it to have much impact on the unemployment rate which was forecast to remain in the 11% range. Consumer confidence had waned somewhat in the last quarter of 1992, reflecting apprehensions about increasing unemployment and fluctuating interest rates. This indicated that consumers were still quite concerned about their own finances and that there would not

be a very strong recovery in consumer spending levels. Housing starts were forecast to continue increasing, but at a relatively modest rate.

Although business confidence was improving, indicating an increased optimism in the economy, investment was still seen to be restricted by weak profits, slow growth in demand and heavy corporate debt. Exports were expected to continue as the leading sector in the economy, spurred on by an improving U.S. economy and a relatively low Canadian dollar. The U.S. economy, however, was still being held back somewhat by relatively high unemployment and slow job growth.

While the North American economy is gathering momentum, there is lingering weakness in other major economies of the world, such as in Europe and Japan. In fact, some countries, such as Germany, are expected to experience very little growth in 1993, if any at all. Subdued economic growth and generally weak demand for goods in international markets will continue to put downward pressure on commodity prices. Current expectations, however, are that international economies will begin to show signs of improvement by mid-1993.

Canada's mineral resources are a source of strength to the economy. Canada enjoys a richness of mineral resources that many nations of the world do not. In 1992, Canada's mineral industry (excluding oil and natural gas) accounted for more than 4% of Canada's GDP, about 3% of total national employment, and over 16% of total Canadian exports. In helping to meet the world's demand for basic minerals and mineral products, there should be opportunities for Canada to remain a significant player on the international scene. However, these opportunities have not, and will not, come without having to face major challenges . . . challenges such as those presented by increasingly restrictive environmental protection regulations, the competition for investment dollars, and stiff competition in commodity markets. With a determined and cooperative effort by industry, governments, environmentalists, labour and the native people, it is expected that joint endeavours, such as the Whitehorse Mining Initiative, will be rewarded with success and that the Canadian mineral industry will continue to be a major contributor to the economy of the country.

Note: Information in this review was current as of February 1, 1993.

TABLE 1. CANADA, PRODUCTION OF LEADING MINERALS, 1991 AND 1992

TABLE 1. CANADA, PRODUCTION OF LEADING MINERALS, 1991 AND 1992							
		Volume		Percent Change	Value		Percent Change
		1991	1992p	1992/1991	1991	1992p	1992/1991
		(000 tonnes except where noted)				(\$ millions)	
METALS							
Gold	kg	176 125.9	157 554.0	-10.5	2 349.9	2 086.8	-11.2
Copper		780.4	744.7	-4.6	2 112.2	2 062.9	-2.3
Zinc		1 083.0	1 193.6	10.2	1 385.2	1 727.1	24.7
Nickel		188.1	189.1	0.5	1 807.6	1 679.9	-7.1
Iron ore		35 421.2	32 771.9	-7.5	1 228.2	1 129.4	-8.0
Uranium	tU	8 161.7	9 057.5	11.0	595.5	575.6	-3.3
Lead		248.1	318.5	28.4	210.9	230.9	9.5
Silver	t	1 261.4	1 147.4	-9.0	187.7	173.2	-7.7
Cobalt		2.2	2.2	2.2	77.5	136.9	76.5
Platinum group	kg	11 122.6	10 504.7	-5.6	150.2	117.1	-22.0
NONMETALS							
Potash (K ₂ O)		7 087.0	7 324.2	3.3	931.9	963.3	3.4
Salt		11 870.9	11 100.4	-6.5	259.2	253.8	-2.1
Asbestos		686.0	601.3	-12.4	271.0	235.8	-13.0
Sulphur, elemental		6 180.0	6 349.7	2.7	335.4	131.4	-60.8
Peat		833.1	855.6	2.7	100.1	108.2	8.1
Gypsum		6 727.2	6 891.9	2.4	71.7	79.2	10.5
STRUCTURALS							
Cement		9 372.2	8 483.7	-9.5	810.8	739.2	-8.8
Sand and gravel		216 263.9	201 081.8	-7.0	741.3	637.0	-14.1
Stone		87 825.7	81 639.1	-7.0	539.7	507.6	-5.9
Lime		2 375.3	2 383.3	0.3	193.5	182.8	-5.5
Clay products		..	..	..	119.8	117.3	-2.1
FUELS							
Petroleum	000 m ³	89 788.4	93 997.1	4.7	10 456.4	11 251.1	7.6
Natural gas	million m ³	105 243.7	118 925.4	13.0	5 394.1	5 607.7	4.0
Natural gas by-products	000 m ³	24 918.8	26 551.4	6.6	2 178.1	2 296.8	5.5
Coal		71 133.0	64 550.0	-9.3	1 916.8	1 663.3	-13.2

Sources: Energy, Mines and Resources Canada; Statistics Canada.

.. Not available; p Preliminary.

Note: Figures have been rounded.

TABLE 2. EXPORTS OF MINERAL COMMODITIES BY COUNTRY AND BY COMMODITY AS DEFINED BY THE HARMONIZED SYSTEM (HS), 1992 (9 MONTH)

HS Chapter ¹	Description	United States		EEC ²		Japan		Mexico		Other		Total	
		(\$000)	(%)	(\$000)	(%)	(\$000)	(%)	(\$000)	(%)	(\$000)	(%)	(\$000)	(%)
25	Salts; sulphur; earths or stone, plastering materials, lime and cement	362 768	43.0	68 826	8.2	45 727	5.4	19 218	2.3	346 674	41.1	843 213	100
26	Ores, slag and ash	297 413	16.4	822 991	45.3	479 526	26.4	12 176	0.7	203 076	11.2	1 815 182	100
27	Mineral fuels, oils and products of their distillation; bituminous substances; mineral waxes ³	10 651 802	87.0	229 869	1.9	863 905	7.1	25 775	0.2	466 757	3.8	12 238 108	100
28	Inorganic chemicals; compounds of precious metals, radioactive elements, etc.	1 018 215	81.6	82 131	6.6	75 151	6.0	302	—	71 458	5.7	1 247 257	100
31	Fertilizers	800 458	66.4	21 867	1.8	47 838	4.0	—	—	335 565	27.8	1 205 728	100
68	Articles of stone, plaster, cement, asbestos, mica or similar materials	241 928	92.5	6 506	2.5	3 740	1.4	—	—	9 270	3.5	261 444	100
69	Ceramic products	29 821	80.1	1 837	4.9	225	0.6	6	—	5 338	14.3	37 227	100
70	Glass and glassware	258 615	83.1	38 201	12.3	3 010	1.0	42	—	11 155	3.6	311 023	100
71	Natural/cultured pearls, precious stones and metals, coins, etc.	1 230 192	55.5	115 596	5.2	42 586	1.9	71	—	829 105	37.4	2 217 550	100
72	Iron and steel	1 508 807	83.5	98 526	5.5	7 024	0.4	49 862	2.8	141 900	7.9	1 806 119	100
73	Articles of iron or steel	1 140 034	91.8	19 649	1.6	1 850	0.1	20 010	1.6	59 720	4.8	1 241 263	100
74	Copper and articles thereof	752 952	65.4	283 383	25.5	1 983	0.2	5	—	98 028	8.8	1 109 351	100
75	Nickel and articles thereof	422 542	34.1	373 069	30.1	71 166	5.8	4 682	0.4	366 112	29.6	1 237 571	100
76	Aluminum and articles thereof	1 967 174	74.5	294 244	11.1	179 304	6.8	274	—	198 509	7.5	2 639 505	100
78	Lead and articles thereof	66 451	72.8	8 247	9.0	1 576	1.7	—	—	14 966	16.4	91 240	100
79	Zinc and articles thereof	512 603	82.5	15 157	2.4	18 033	2.9	—	—	75 564	12.2	621 357	100
80	Tin and articles thereof	6 403	87.1	137	1.9	142	1.9	—	—	668	9.1	7 350	100
81	Other base metals; cermets; and articles thereof	64 742	40.2	35 335	21.9	11 372	7.1	1 074	0.7	48 643	30.2	161 166	100
Total mineral exports		21 305 920	73.2	2 515 571	8.6	1 854 158	6.4	133 497	0.5	3 282 508	11.3	29 091 654	100
Total domestic exports		86 289 538	76.6	8 106 544	7.2	5 513 169	4.9	547 108	0.5	12 162 923	10.8	112 619 282	100
Percentage, mineral to domestic		24.7		31.0		33.6		24.4		27.0		25.8	

Source: Statistics Canada, Catalogue 65-003 (Quarterly).

¹ Chapter refers to a group of commodities covered in a specified chapter of the "Harmonized Commodity Description and Coding System," as of January 1, 1988. Canadian external trade statistics are classified according to the Harmonized System. ² EEC: European Economic Community. ³ Total value of coal exports included in Chapter 27 is \$1577 million.

— Nil.

Resource Sector Comparisons for 1989, 1990 and 1991 – Mineral, Energy and Forestry Sectors

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The Mineral and Metal Statistics Division (MMSD) of the Mineral Policy Sector (MPS) has prepared a comparison of the mineral, energy and forestry sectors on the basis of selected economic indicators for the period 1989-91.¹ Relative to the Canadian totals in 1991, the table below summarizes the percentage shares that are attributed to each of the sectors for the respective indicators. They illustrate the relative significance of the individual sectors, as well as the high level of their combined contribution to the economy.²

PERCENTAGE SHARE OF TOTAL ECONOMY IN 1991 (INCLUDING STAGES I THROUGH IV)

	Mineral Sector	Energy Sector	Forestry Sector	Total Three Sectors
			(%)	
GDP (in 1986 \$)	4.4	6.7	4.0	15.5
Capital and repair	5.6	15.8	4.5	25.9
Exports	17.1	9.9	15.5	42.5
Imports	9.5	4.6	4.5	18.6
Employment	2.8	1.5	4.1	8.4

Note: Numbers may not add to totals due to rounding.

In these comparisons, it should be noted that coal and uranium data are included in the Mineral Sector. This is a normal procedure followed by MMSD when reporting mineral industry statistics on an individual sector basis. Therefore, to avoid double-counting, the Energy Sector data exclude these minerals.

While the comparisons are based on the most recent information available, it should be remembered that these data are subject to further revisions. Such revisions, however, would not be expected to materially alter the broad level of sector comparisons given here.

In dollar terms or units, the amounts accounted for by each sector are summarized in the following table:

VALUE OR LEVEL OF SELECTED INDICATORS IN 1991 (INCLUDING STAGES I THROUGH IV)

	Mineral Sector	Energy Sector	Forestry Sector	Total Three Sectors
				(\$ billions)
GDP (in 1986 \$)	21.6	33.5	19.8	74.9
Capital and repair	9.1	25.9	7.3	42.3
Exports	23.6	13.7	21.4	58.7
Imports	12.8	6.2	6.1	25.1
Trade balance	10.8	7.5	15.4	33.7
				(thousands)
Employment	351	190	507	1 048

Note: Numbers may not add to totals due to rounding.

- 1 A comparison for 1992 will be prepared later this year when sufficient information becomes available for the selected economic indicators.
- 2 MMSD is considering including the agriculture and fishing and trapping sectors in its resource sector comparisons, thus covering all of the resource-based industries of the economy.

In the attachments to this article, Table 1 presents a detailed comparison in terms of industry output levels, employment, capital investment and repair expenditures, exports, imports, and the merchandise trade surplus. The data are provided for each stage of processing activity (Stages I through IV) from raw material production through to the semi-fabricating and fabricating industries. Table 2 shows the percentage shares of the total economy

that these levels represent, while Table 3 shows the cumulative percentage shares for Stages I through IV.

RECENT TRENDS IN SECTOR SHARES

For purposes of comparison with 1991, Table 3 also shows the cumulative percentage shares for Stages I through IV for the years 1989 and 1990. The sector trends over this period are discussed briefly below:

GDP, 1989-91

	1989	1990	1991
(% share, Stages I to IV)			
Mineral	4.9	4.5	4.4
Energy	6.6	6.5	6.7
Forestry	4.6	4.3	4.0
Total	16.1	15.3	15.1

Although the Mineral Sector's output in 1991 was lower in all four stages of the industry compared to 1989, the decline in the sector's share of GDP took place entirely in Stages III and IV. This reflected a general weakness in the manufacturing industries of the economy, which were hit particularly hard during the recent recession. The Energy Sector's share of GDP stayed relatively constant. A downward trend was experienced by all stages of the Forestry Sector.

CAPITAL AND REPAIR, 1989-91

	1989	1990	1991
(% share, Stages I to IV)			
Mineral	6.0	6.2	5.6
Energy	11.3	13.0	15.8
Forestry	5.9	5.3	4.5
Total	23.2	24.5	25.9

The Mineral Sector's share of total capital and repair spending declined in 1991, following an increase in 1990. The decrease in 1991 reflected major reductions in investment expenditures in Stage I (metal mining, nonmetal mining and coal) and in Stage II (smelting and refining). While most sectors of the Canadian economy recorded reduced spending in 1991, the Energy Sector's

share increased markedly as a result of major investment in all areas of the industry: oil and gas exploration and production, oil refining, oil and gas pipelines, natural gas distribution, and electric power systems. The Forestry Sector's share fell largely as a result of major cutbacks in pulp and paper mill investment (Stage II).

DOMESTIC EXPORTS, 1989-91

	1989	1990	1991
(% share, Stages I to IV)			
Mineral	19.2	17.6	17.1
Energy	7.8	9.3	9.9
Forestry	17.5	16.2	15.5
Total	44.5	43.1	42.5

The Mineral Sector's share of the total value of Canadian domestic exports fell in both 1990 and 1991, reflecting the impact of declining prices for mineral commodities in general. The Energy Sector's share increased in both 1990 and 1991. In 1990, this was mainly the result of much higher prices for crude oil and petroleum products. In 1991, there were significant volume increases in the export of crude oil, natural gas and related products. The Forestry Sector's share of total exports fell largely as a result of a significant decline in exports of wood pulp (Stage II).

EMPLOYMENT, 1989-91

	1989	1990	1991
(% share, Stages I to IV)			
Mineral	3.4	3.1	2.8
Energy	1.5	1.5	1.5
Forestry	4.7	4.3	4.1
Total	9.6	8.9	8.4

The total number of jobs in the Mineral Sector peaked in 1989 at more than 422 000, representing 3.4% of total employment in Canada. Since then, mineral industry employment followed a downward trend in all stages of the industry, falling to 351 000 in 1991, or 2.8% of the Canadian total. Most of the decline in percentage share took place in the semi-fabricating and fabricating stages which together account for about two thirds of mineral industry employment. Employment in the Energy Sector, which is relatively smaller than in the mineral and forestry industries, remained steady at 1.5% of total Canadian employment. The

Forestry Sector experienced a weak job market in all stages of the forestry and forest products industries.

SECTOR DEFINITIONS

The specific industries that are included in these comparisons are identified in Appendixes A-1 (Mineral Sector), A-2 (Energy Sector) and A-3 (Forestry Sector) according to their Standard Industrial Classification (SIC) codes. In very general terms, the sectors are defined as follows:

Mineral Sector

- mining and concentrating, and quarrying;
- metal extraction industries;
- minerals and metals-based semi-fabricating industries; and
- metal fabricating industries.

Energy Sector

- crude petroleum and natural gas industries;
- service industries incidental to mineral extraction;
- refined petroleum products industries;
- oil and gas pipeline transportation;
- natural gas distribution; and
- electric power systems.

Forestry Sector

- logging;
- wood and wood products industries;
- paper and paper products industries;
- furniture industries; and
- printing and publishing industries.

Note: The Energy Sector data exclude wholesale and retail trade of petroleum and petroleum products. These industries are grouped by Statistics Canada in the services-producing sector of the economy as opposed to the goods-producing sector, and are not included in these comparisons.

DATA SOURCES

The data presented in the detailed tables are a composite of data obtained from Statistics Canada, Forestry Canada, the Information Systems Section of the Energy Sector, EMR Canada, as well as MMSD of the Mineral Policy Sector, EMR Canada. In cases where actual data were not yet available, preliminary estimates were prepared by MMSD.

Note: Information in this review was current as of March 15, 1993.

**TABLE 1. COMPARATIVE ECONOMIC DIMENSIONS, 1991 PRELIMINARY,
NATURAL RESOURCE SECTORS – MINERALS/ENERGY/FORESTRY**

Sector and Stage of Processing	GDP (1986 \$)	Value of Shipments	Employment	Investment		Domestic Exports	Imports	Balance of Trade
				Capital	Capital and Repair			
	(\$ millions)		(number)			(\$ millions)		
MINERAL SECTOR (INCLUDING COAL AND URANIUM)								
Stage I: Crude ores	6 891.6	14 374.3	69 271	1 882.3	3 717.6	8 720.0	2 563.0	6 157.0
Stage II: Smelting and refining	4 895.8	12 856.6	63 664	2 328.7	3 868.9	8 249.0	2 820.0	5 429.0
Stage III: Semi-fabricating	4 885.4	12 681.4	83 263	504.3	1 155.0	4 714.0	5 127.0	413.0
Total, Stages I to III	16 472.8	39 912.3	216 198	715.3	8 741.5	21 683.0	10 510.0	11 173.0
Stage IV: Fabricating	5 164.1	14 547.0	134 851	231.9	385.1	1 885.0	2 307.0	-422.0
Total, all stages	21 636.9	54 459.3	351 049	4 947.2	9 126.6	23 568.0	12 817.0	10 751.0
ENERGY SECTOR (EXCLUDING COAL AND URANIUM)								
Stage I: Crude petroleum and natural gas	13 120.3	17 946.0	55 508	5 800.1	6 937.8	9 566.0	4 567.0	4 999.0
Stage II: Refined petroleum	1 920.3	16 324.0	12 517	1 045.4	1 543.6	3 553.0	1 570.0	1 983.0
Stage III: Miscellaneous petroleum products	(1)	533.0	823	(1)	(1)	(1)	(1)	(1)
Total, Stages I to III	15 040.6	34 803.0	68 848	6 845.5	8 481.4	13 119.0	6 137.0	6 982.0
Stage IV: Electricity and energy distribution	18 447.7	28 600.6	121 048	15 167.1	17 378.3	554.0	71.0	483.0
Total, all stages	33 488.3	63 403.6	189 896	22 012.6	25 859.7	13 673.0	6 208.0	7 465.0
FORESTRY SECTOR								
Stage I: Logging	2 483.1	7 300.0	62 000	119.9	390.6	302.5	259.1	43.4
Stage II: Sawmills, pulp and paper mills	8 528.8	24 044.0	148 000	3 025.9	5 369.8	16 669.4	810.3	15 859.1
Stage III: Wood and paper products	3 188.9	10 386.0	89 000	384.8	733.3	3 668.1	2 420.3	1 247.8
Total, Stages I to III	14 200.8	41 730.0	299 000	3 530.6	6 493.7	20 640.0	3 489.7	17 150.3
Stage IV: Furniture, printing and publishing	5 573.1	16 219.0	208 000	626.3	835.0	790.0	2 580.3	-1 790.3
Total, all stages	19 773.9	57 949.0	507 000	4 156.9	7 328.7	21 430.0	6 070.0	15 360.0
Total economy	497 162.8	..	12 340 000	126 635.3	163 881.6	138 079.0	135 283.9	(2)

Sources: Statistics Canada publications; Economics and Statistics Directorate, Forestry Canada; Statistics Unit, Energy Sector, and Mineral and Metal Statistics Division (MMSD), Mineral Policy Sector, Energy, Mines and Resources Canada. These data are preliminary and are subject to revision. In the case where actual data are not yet available, preliminary estimates have been prepared by MMSD.

.. Not available.

(1) Data for Stage III are included with Stage II. (2) Trade balance is not shown as it would be understated since the export data exclude re-exports. Notes: Dollar data are in millions of current dollars, except GDP which is the factor cost at 1986 prices. Component items may not add to totals due to rounding. **Mineral sector** includes crude mineral ores and concentrates (including coal and uranium); smelting and refining industries; minerals/metals-based semi-manufacturing industries; and metal fabricating industries. **Energy sector** includes crude petroleum and natural gas industries; service industries incidental to mineral extraction; refined petroleum and natural gas industries; and pipeline transport, electric power systems and gas distribution. Petroleum data exclude the services industries (wholesale/retail trade). **Forestry sector** includes logging; wood industries; paper and allied products industries; furniture industries; printing and publishing industries.

TABLE 2. COMPARATIVE ECONOMIC DIMENSIONS, 1991 PRELIMINARY, NATURAL RESOURCE SECTORS – MINERALS/ENERGY/FORESTRY

Sector and Stage of Processing	GDP (1986 \$)	Employment	Investment		Domestic Exports	Imports
			Capital	Capital and Repair		
			(% of total economy)			
MINERAL SECTOR (INCLUDING COAL AND URANIUM)						
Stage I: Crude ores	1.4	0.6	1.5	2.3	6.3	1.9
Stage II: Smelting and refining	1.0	0.5	1.8	2.4	6.0	2.1
Stage III: Semi-fabricating	0.9	0.7	0.4	0.7	3.4	3.8
Total, Stages I to III	3.3	1.8	3.7	5.3	15.7	7.8
Stage IV: Fabricating	1.0	1.1	0.2	0.2	1.4	1.7
Total, all stages	4.4	2.8	3.9	5.6	17.1	9.5
ENERGY SECTOR (EXCLUDING COAL AND URANIUM)						
Stage I: Crude petroleum and natural gas	2.6	0.4	4.6	4.2	6.9	3.4
Stage II: Refined petroleum	0.4	0.1	0.8	0.9	2.6	1.2
Stage III: Miscellaneous petroleum products	(1)	—	(1)	—	(1)	(1)
Total, Stages I to III	3.0	0.6	5.4	5.2	9.5	4.5
Stage IV: Electricity and energy distribution	3.7	1.0	12.0	10.6	0.4	0.1
Total, all stages	6.7	1.5	17.4	15.8	9.9	4.6
FORESTRY SECTOR						
Stage 1: Logging	0.5	0.5	0.1	0.2	0.2	0.2
Stage II: Sawmills, pulp and paper mills	1.7	1.2	2.4	3.3	12.1	0.6
Stage III: Wood and paper products	0.6	0.7	0.3	0.4	2.7	1.8
Total, Stages I to III	2.9	2.4	2.8	4.0	14.9	2.6
Stage IV: Furniture, printing and publishing	1.1	1.7	0.5	0.5	0.6	1.9
Total, all stages	4.0	4.1	3.3	4.5	15.5	4.5

Sources: Statistics Canada publications; Economics and Statistics Directorate, Forestry Canada; Statistics Unit, Energy Sector, and Mineral and Metal Statistics Division (MMSD), Mineral Policy Sector, Energy, Mines and Resources Canada. These data are preliminary and are subject to revision. In the case where actual data are not yet available, preliminary estimates have been prepared by MMSD.

– Nil.

(1) Data for Stage III are included with Stage II.

Notes: Component items may not add to totals due to rounding. **Mineral sector** includes crude mineral ores and concentrates (including coal and uranium); smelting and refining industries; minerals/metals-based semi-manufacturing industries; and metal fabricating industries. **Energy sector** includes crude petroleum and natural gas industries; service industries incidental to mineral extraction; refined petroleum and natural gas industries; and pipeline transport, electric power systems and gas distribution. Petroleum data exclude the services industries (wholesale/retail trade). **Forestry sector** includes logging; wood industries; paper and allied products industries; furniture industries; printing and publishing industries.

TABLE 3. CUMULATIVE PERCENTAGE SHARES, STAGES I THROUGH IV, 1989 AND 1990 VS. 1991

	Mineral Sector			Energy Sector			Forestry Sector			Total Three Sectors		
	1989	1990	1991	1989	1990	1991	1989	1990	1991	1989	1990	1991
GDP (in 1986 \$)												
Stage I	1.4	1.4	1.4	2.6	2.6	2.6	0.6	0.5	0.5	4.6	4.5	4.5
Stages I and II	2.4	2.4	2.4	3.0	3.0	3.0	2.5	2.3	2.2	7.9	7.7	7.6
Stages I to III	3.6	3.4	3.3	3.0	3.0	3.0	3.3	3.0	2.9	9.9	9.4	9.2
Stages I to IV	4.9	4.5	4.4	6.6	6.5	6.7	4.6	4.3	4.0	16.1	15.3	15.1
CAPITAL AND REPAIR												
Stage I	2.6	2.6	2.3	3.3	3.6	4.2	0.4	0.3	0.2	6.3	6.5	6.7
Stages I and II	4.8	5.1	4.7	4.1	4.5	5.1	4.8	4.3	3.5	13.7	13.9	13.3
Stages I to III	5.7	6.0	5.3	4.1	4.5	5.2	5.4	4.8	4.0	15.2	15.3	14.5
Stages I to IV	6.0	6.2	5.6	11.3	13.0	15.8	5.9	5.3	4.5	23.2	24.5	25.9
DOMESTIC EXPORTS												
Stage I	7.1	6.5	6.3	5.6	6.3	6.9	0.3	0.3	0.2	13.0	13.1	13.4
Stages I and II	13.8	12.7	12.3	7.3	8.9	9.5	14.3	13.0	12.3	35.4	34.6	34.1
Stages I to III	17.7	16.2	15.7	7.3	8.9	9.5	16.9	15.7	14.9	41.9	40.8	40.1
Stages I to IV	19.2	17.6	17.1	7.8	9.3	9.9	17.5	16.2	15.5	44.5	43.1	42.5
IMPORTS												
Stage I	2.2	2.0	1.9	2.7	4.1	3.4	0.2	0.2	0.2	5.1	6.3	5.5
Stages I and II	4.6	4.2	4.0	3.9	5.6	4.5	0.9	0.9	0.8	9.4	10.7	9.3
Stages I to III	8.9	8.3	7.8	3.9	5.6	4.5	2.5	2.5	2.6	15.3	16.4	14.9
Stages I to IV	10.8	10.1	9.5	4.1	6.0	4.6	4.1	4.3	4.5	19.0	20.4	18.6
EMPLOYMENT												
Stage I	0.6	0.6	0.6	0.5	0.4	0.4	0.6	0.5	0.5	1.7	1.5	1.5
Stages I and II	1.2	1.2	1.1	0.6	0.6	0.5	2.0	1.7	1.7	3.8	3.5	3.3
Stages I to III	2.1	1.9	1.8	0.6	0.6	0.6	2.8	2.5	2.4	5.5	5.0	4.8
Stages I to IV	3.4	3.1	2.8	1.5	1.5	1.5	4.7	4.3	4.1	9.6	8.9	8.4

Note: Percentage shares for individual stages should be taken from Table 2.

APPENDIX A-1

Mineral Sector Industries by Stage (per 1980 Standard Industrial Classification)

Stage I – Mining

Major Group 06 Mining Industries

- 061 Metal Mines
- 062 Non-Metal Mines (except Coal Mines)
- 063 Coal Mines

Major Group 08 Quarry and Sand Pit Industries

- 081 Stone Quarries
- 082 Sand and Gravel Pits

Major Group 09 Service Industries Incidental to Mineral Extraction (SIC 092 only)

- 092 Service Industries Incidental to Mining (excluding oil and natural gas)

Stage II – Metallurgical Extraction

Major Group 29 Primary Metal Industries (SIC 291 and 295 only)

- 291 Primary Steel Industries
- 295 Non-Ferrous Metal Smelting/Refining Industries

Stage III – Minerals/Metals-Based Semi-Fabricating Industries

Major Group 29 Primary Metal Industries (except SIC 291 and 295)

- 292 Steel Pipe and Tube Industry
- 294 Iron Foundries

- 296 Aluminum Rolling, Casting and Extruding Industry
- 297 Copper Rolling, Casting and Extruding Industry
- 299 Other Rolled, Cast and Extruded Non Ferrous Metal Products Industries

Major Group 30 Fabricated Metal Products Industries (SIC 305 only)

- 305 Wire and Wire Products Industries¹

Major Group 35 Non-Metallic Mineral Products Industries

- 351 Clay Products Industries
- 352 Hydraulic Cement Industry
- 354 Concrete Products Industries
- 355 Ready-Mix Concrete Industry
- 356 Glass and Glass Products Industries
- 357 Abrasives Industry
- 358 Lime Industry
- 359 Other Non-Metallic Mineral Products Industries

Stage IV – Metal Fabricating²

Major Group 30 Fabricated Metal Products Industries (except SIC 305)

- 301 Power Boiler and Heat Exchanger Industry
- 302 Fabricated Structural Metal Products Industries
- 303 Ornamental and Architectural Metal Products Industries
- 304 Stamped, Pressed and Coated Metal Products Industries
- 306 Hardware, Tool and Cutlery Industries
- 307 Heating Equipment Industry
- 308 Machine Shop Industry
- 309 Other Metal Fabricating Industries

¹ Although Wire and Wire Products Industries (SIC 305) are part of SIC Major Group 30 (Fabricated Metal Products Industries, i.e., Stage IV), the bulk of the output from SIC 305 is associated with Stage III. Because of the difficulty in splitting SIC 305 into Stage III and Stage IV components, SIC 305 is thus counted as Stage III rather than Stage IV.

² Machinery Industries (Major Group 31) and Transportation Equipment Industries (Major Group 32) are not included.

APPENDIX A-2

Energy Sector Industries by Stage (per 1980 Standard Industrial Classification)

Stage I – Crude Petroleum and Natural Gas Industries

Major Group 07 Crude Petroleum and Natural
Gas Industries

071 Crude Petroleum and Natural Gas
Industries

Major Group 09 Service Industries Incidental to
Mineral Extraction (SIC 091 only)

091 Service Industries Incidental to Crude
Petroleum and Natural Gas

Stages II and III – Refined Petroleum and Coal Products

Major Group 36 Refined Petroleum and Coal
Products Industries

361 Refined Petroleum Products Industries

369 Other Petroleum and Coal Products
Industries

Stage IV – Energy Transportation and Distribution

Major Group 46 Pipeline Transport Industries

461 Pipeline Transport Industries

Major Group 49 Other Utility Industries

491 Electric Power Systems Industry

492 Gas Distribution Systems Industry

APPENDIX A-3

Forestry Sector Industries by Stage (per 1980 Standard Industrial Classification)

Stage I – Logging and Forestry Services Industries

Major Group 04 Logging Industry
041 Logging Industry

Major Group 05 Forestry Services Industry
051 Forestry Services Industry

Stage II – Sawmills, Pulp and Paper Mills

Major Group 25 Wood Industries (SIC 251 only)
251 Sawmill, Planing Mill and Shingle Mill
Products Industries

Major Group 27 Paper & Allied Products
Industries (SIC 271 only)
271 Pulp and Paper Industries

Stage III – Other Wood and Paper Industries

Major Group 25 Wood Industries (except SIC 251)
252 Veneer and Plywood Industries
254 Sash, Door and Other Millwork Industries
256 Wooden Box and Pallet Industry
258 Coffin and Casket Industry
259 Other Wood Industries

Major Group 27 Paper and Allied Products
Industries (except SIC 271)
272 Asphalt Roofing Industry
273 Paper Box and Bag Industries
279 Other Converted Paper Products Industries

Stage IV – Furniture and Printing & Publishing Industries

Major Group 26 Furniture and Fixture Industries
261 Household Furniture Industries
264 Office Furniture Industries
269 Other Furniture and Fixture Industries

Major Group 28 Printing and Publishing
Industries
281 Commercial Printing Industries
282 Platemaking, Typesetting and Bindery
Industry
283 Publishing Industries
284 Combined Publishing and Printing Industries

Exploration Expenditure Statistics, 1991-93

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BACKGROUND

Energy, Mines and Resources Canada and Statistics Canada work in cooperation with the provinces to assemble a comprehensive set of statistics on Canadian exploration activities.

Canadian exploration expenditures, exclusive of those spent in the search for oil and gas resources, totalled \$532 million in 1991, down from the \$775 million spent in 1990. Senior companies spent \$415 million (78%) of the \$532 million, and junior companies spent the remaining \$117 million (22%). Out of this \$532 million, a total of \$465 million was spent on general exploration. The remaining \$67 million was directed to mine-site exploration (defined as the search for new deposits on the properties of existing mines). The most active exploration areas were Quebec (\$138 million), British Columbia (\$136 million) and Ontario (\$110 million).

Compared with the 1991 results, the preliminary data for 1992 show a decline in the level of exploration expenditures to about \$420 million, mainly

due to a sharp decline in exploration spending in British Columbia. Senior companies are expected to have spent \$335 million (80%) of the \$420 million, while junior companies would have spent \$85 million (20%). Again, Quebec (\$111 million), Ontario (\$95 million) and British Columbia (\$70 million), in that order, are expected to be the provinces in which the majority of exploration activity occurred. In terms of percentage change, these 1992 figures would represent a 19% decline in Quebec, a 14% decline in Ontario and a 48% decline in British Columbia from the 1991 actual figures. While the decline in exploration spending in British Columbia reflected a real drop in exploration activity in the province, the downturn was somewhat overstated by a peak during 1990 and 1991 in large-expenditure work programs which coincided at several major projects.

The 1993 forecast reveals that the decline in exploration activity may have bottomed out. Early indications are that some \$435 million could be spent on exploration in Canada in 1993. Senior companies expect to spend \$299 million (69%) of the \$435 million, and the junior companies expect to spend \$136 million (31%). If the forecast turns out to be accurate, exploration activity in 1993 would be comparable to the exploration level of 1992. Quebec (\$141 million), Ontario (\$94 million) and British Columbia (\$58 million) are expected to be the busiest provinces.

TABLE 1. GENERAL EXPLORATION PLUS MINE-SITE EXPLORATION EXPENDITURES BY PROVINCE, 1991-93

	1991 ^a		1992 ^b	1993 ^c
	Field Expenditures	Field and Related Overhead Expenditures	Field and Related Overhead Expenditures	Field and Related Overhead Expenditures
(\$000)				
Newfoundland	9 663	12 065	9 823	9 501
Nova Scotia	3 006	4 532	2 757	3 168
New Brunswick	13 358	15 805	16 891	16 580
Quebec	127 372	138 108	111 431	141 020
Ontario	86 471	109 683	94 559	93 669
Manitoba	26 241	29 692	25 456	22 140
Saskatchewan	26 119	31 488	39 735	42 446
Alberta	5 061	6 621	4 173	7 577
British Columbia	102 878	135 670	70 465	57 851
Northwest Territories	27 189	31 624	34 706	32 357
Yukon	11 877	16 477	9 659	8 315
Total Canada	439 235	531 764	419 655	434 624
Canada ¹	375 107	464 451	344 191	364 500
Canada ²	64 128	67 313	75 464	70 124

Sources: Energy, Mines and Resources Canada and Statistics Canada, through federal-provincial surveys of mining and exploration companies.

^a Final 1991. ^b Preliminary estimate 1992 (survey carried out December 1992 through March 1993). ^c Forecast 1993 (survey carried out December 1992 through March 1993).

¹ General exploration. ² Mine-site exploration, i.e., the search for new mines on the properties of existing mines.

Note: Figures may not add to totals due to rounding.

Statistical Tables

TABLE 1. CANADA, PRODUCTION OF LEADING MINERALS

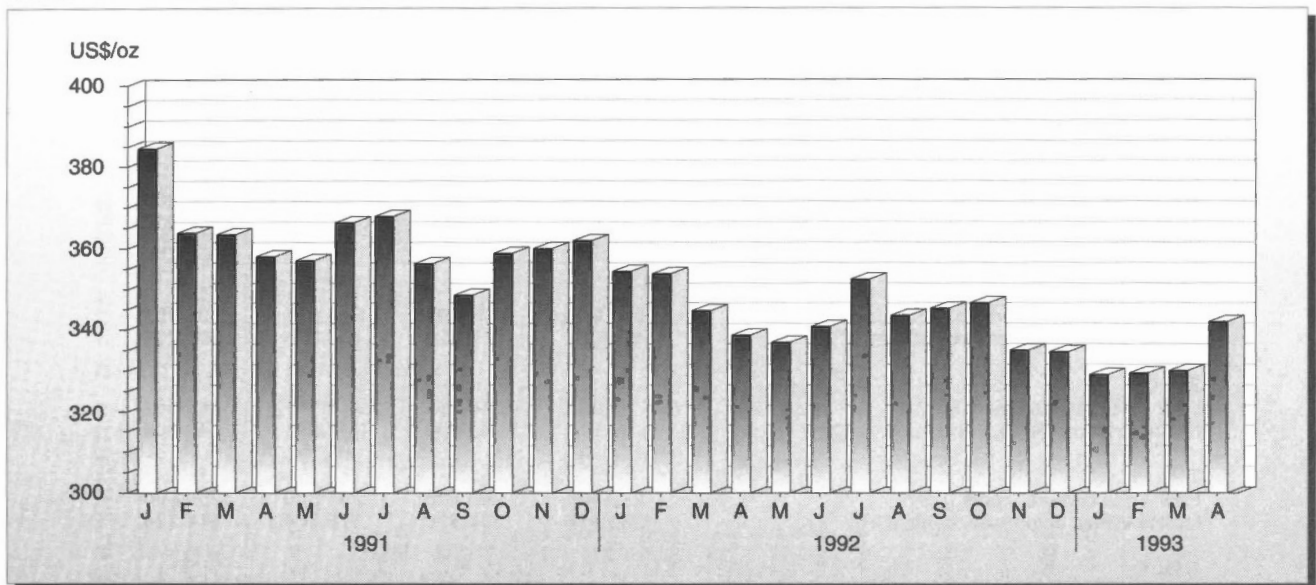
		1992				1993				Percentage Changes		
		January	February	March	Total 3 Months	January	February	March	Total 3 Months	March 1993 March 1992	March 1993 February 1993	3 Months 1993 1992
(000 tonnes except where noted)												
METALS												
Copper		60.7 ^r	60.3 ^r	70.0 ^r	191.0 ^r	57.2 ^r	57.8	62.8	177.8	-10.3	8.7	-6.9
Gold	kg	13 140.7 ^r	12 282.6 ^r	13 841.8 ^r	39 265.1 ^r	12 420.8 ^r	11 488.6 ^r	13 021.7	36 931.1	-5.9	13.3	-5.9
Iron ore		1 506.8	1 119.4	1 074.1	3 700.2	1 216.5	858.8	1 133.7	3 209.1	5.6	32.0	-13.3
Lead		22.2 ^r	23.7 ^r	20.6 ^r	66.5 ^r	21.1	17.1	22.2	60.4	7.9	30.1	-9.2
Molybdenum	t	964.6	674.7	652.4	2 291.6	1 116.5	813.0	836.9	2 766.3	28.3	2.9	20.7
Nickel		14.8 ^r	16.7 ^r	18.9 ^r	50.4 ^r	11.5	14.9	18.1	44.4	-4.5	21.6	-11.9
Silver	t	95.4	92.0	97.9	285.3	76.9 ^r	73.6	78.8	229.3	-19.5	7.0	-19.6
Uranium ¹	t	692.4 ^r	653.1 ^r	661.7 ^r	2 007.2 ^r	290.5	816.6	862.8	1 969.9	30.4	5.7	-1.9
Zinc		66.4 ^r	78.2 ^r	98.2 ^r	242.7 ^r	77.7	56.7	95.2	229.6	-3.1	67.8	-5.4
NONMETALS												
Asbestos		50.5	47.4 ^r	45.7	143.6 ^r	41.9	43.4	39.5	124.8	-13.6	-9.0	-13.1
Clay products	\$000	4 951.3	4 543.5	5 749.4	15 244.3	4 987.6	4 885.1	7 074.5	16 947.2	23.0	44.8	11.2
Gypsum		623.9 ^r	571.1 ^r	485.4	1 680.5	509.0	605.0 ^r	548.1	1 662.1	12.9	-9.4	-1.1
Potash K ₂ O		630.3	523.5	693.8	1 847.6	545.6	571.5	728.2	1 845.3	5.0	27.4	-0.1
Cement		296.8 ^r	328.1	441.7 ^r	1 066.5 ^r	256.9 ^r	325.4 ^r	472.0	1 054.3	6.9	45.1	-1.1
Lime		197.8	188.0	194.1	580.0	191.7	178.5	200.3	570.5	3.1	12.2	-1.6
Salt		842.8	641.8	534.3	2 018.8	760.9	746.7	689.6	2 197.2	29.1	-7.7	8.8
FUELS												
Coal		6 610.3	6 063.6	6 305.3 ^r	18 979.2 ^r	5 586.6	5 597.9	..	..	..	..	..
Natural gas	million m ³	12 186.0 ^r	11 738.0 ^r	12 132.0	36 056.0 ^r	13 152.0	..	..	..	..	..	..
Crude oil and equivalent	000 m ³	8 544.0 ^r	7 850.0 ^r	8 668.0 ^r	25 062.0 ^r	8 492.0	..	..	..	..	..	..

Sources: Energy, Mines and Resources Canada; Statistics Canada.

- Nil; ^r Revised.¹ Tonnes uranium (1 tonne U = 1.2999 short tons U₃O₈).

Note: Percentage changes are calculated on the basis of actual production figures as opposed to the rounded figures as shown.

Figure 1
Gold Metal Prices, 1991-93



NOTE: All metal prices London Metal Exchange, a.m. fix.
SOURCE: Mineral Policy Sector, EMR Canada.

(For a detailed listing of metal prices, please refer to Table 2 on the following page.)

TABLE 2. METAL PRICES, 1993

	January	February	March	April
COPPER				
Electrolytic, U.S. producer f.o.b. refinery, cents (US)	103.998	102.250	99.098	92.018
Electrolytic, COMEX, 1st pos. plus 5 cents (US)	100.565	98.263	95.800	87.031
Electrolytic, LME Grade A settlement, cents (US)	102.369	100.362	97.640	88.445
LEAD				
U.S. producer, cents (US)	31.500	30.000	30.000	30.000
Montreal, cents (C)	44.000	44.000	44.000	44.000
LME cash, cents (US)	19.784	18.766	18.392	19.065
SILVER				
Handy & Harmon, cents per troy oz (US)	367.925	364.395	364.804	396.357
Handy & Harmon, cents per troy oz (C)	470.061	459.028	454.874	500.203
ZINC				
LME SHG cash, cents (US)	48.131	48.631	45.181	45.567
North American SHG, cents (US)	50.519	50.896	47.261	48.106
TIN				
New York, dealers, cents (US)	272.438	266.875	261.500	258.500
Metals Week, composite, cents (US)	389.914	384.470	378.364	374.124
GOLD				
London, p.m., US\$ per troy oz	329.010	329.310	330.078	342.150
NICKEL				
New York, dealers, cathode, US\$	2.680	2.760	2.755	2.739
LME cash, US\$	2.690	2.739	2.709	2.709
ANTIMONY				
New York, dealers, cents (US)	78.000	78.000	78.000	78.000
PLATINUM				
London PM fix, US\$ per troy oz	359.330	358.962	350.459	368.938
CADMIUM				
New York, dealers, US\$	0.600	0.600	0.544	0.466
ALUMINUM				
LME cash, cents (C)	69.933	68.261	65.118	63.456
LME cash, cents (US)	54.738	54.188	52.223	50.282
COBALT				
Shot/cathode/250 kg, US\$	18.000	18.000	18.000	18.000
U.S. spot cathode, US\$	15.213	15.625	15.800	15.025
TUNGSTEN				
U.S. spot ore, US\$/MTU	46.297	46.297	43.652	41.888
MOLYBDENUM				
Metals Week dealer oxide, US\$	1.842	1.917	2.098	2.188
URANIUM				
Nuexco, US\$, U ₃ O ₈	7.900	7.850	7.650	7.613

Sources: Metals Week; The Northern Miner.

Average U.S. Exchange Rate for January = 1.2776, February = 1.2597, March = 1.2469, April = 1.262.

Notes: Prices are per pound unless otherwise stated.

TABLE 3. CANADA, REAL GROSS DOMESTIC PRODUCT AT FACTOR COST BY INDUSTRY, IN 1986 PRICES, QUARTERLY (SEASONALLY ADJUSTED AT ANNUAL RATES)

Industry Sector	1992 1st Quarter	1992 2nd Quarter	1992 3rd Quarter	1992 4th Quarter	1993 1st Quarter	% Change 1st Quarter 1993 4th Quarter 1992	% Change 1st Quarter 1993 1st Quarter 1992
(\$ millions)							
TOTAL ECONOMY	499 673.2	500 573.7	502 865.8	505 216.0	510 081.5	1.0	2.1
Business Sector							
Agriculture	10 914.0	10 686.7	10 293.2	10 242.7	10 484.5	2.4	-3.9
Fishing and trapping	915.8	935.0	889.1	866.1	853.9	-1.4	-6.8
Forestry	2 448.2	2 473.6	2 580.8	2 708.9	2 943.9	8.7	20.2
Mines, quarries and oil wells	20 070.6	20 273.2	20 637.0	20 142.4	20 640.2	2.5	2.8
Mining industries	6 224.7	5 983.8	5 975.2	5 557.5	5 712.8	2.8	-8.2
Gold mines	1 517.8	1 467.7	1 496.9	1 422.8	1 528.7	7.4	0.7
Other metal mines	2 360.3	2 387.3	2 456.9	2 179.1	2 111.7	-3.1	-10.5
Iron mines	492.0	499.8	402.4	470.5	447.4	-4.9	-9.1
Asbestos mines	91.5	85.7	79.8	83.9	79.7	-5.0	-12.9
Nonmetal mines	551.1	514.5	604.4	531.6	524.2	-1.4	-4.9
Salt mines	150.6	148.1	146.0	148.4	145.7	-1.8	-3.3
Coal mines	1 061.3	880.6	788.9	721.3	875.5	21.4	-17.5
Crude petroleum and natural gas	12 260.6	12 607.1	12 988.3	12 678.1	12 871.4	1.5	5.0
Quarry and sand pit industries	569.3	606.4	600.9	583.4	576.9	-1.1	1.3
Services related to mineral extraction	1 016.0	1 075.9	1 072.6	1 323.4	1 479.1	11.8	45.6
Manufacturing	84 331.6	84 577.7	85 071.6	87 243.7	89 128.9	2.2	5.7
Construction industry	30 432.7	29 179.0	28 494.7	27 575.8	27 514.4	-0.2	-9.6
Transportation and storage	21 684.8	21 770.1	22 001.3	21 836.5	22 078.9	1.1	1.8
Communications	19 280.4	19 409.7	19 356.8	19 513.5	19 699.0	1.0	2.2
Other utilities	16 022.3	16 058.6	16 120.6	16 487.4	16 668.5	1.1	4.0
Wholesale trade	28 653.5	29 257.1	29 789.9	30 071.7	30 415.7	1.1	6.2
Retail trade	29 880.5	29 951.0	30 213.5	30 464.0	30 775.3	1.0	3.0
Finance, insurance and real estate	82 842.7	83 315.7	84 336.3	84 271.4	84 554.6	0.3	2.1
Community, business and personal services	60 000.8	60 584.1	60 719.7	60 930.6	61 245.8	0.5	2.1
Non-Business Sector							
Government service industries	34 106.0	34 012.5	34 103.9	34 359.9	34 329.9	-0.1	0.7
Community and personal services	53 722.8	53 719.9	53 861.4	54 063.9	54 242.8	0.3	1.0
Other non-business industries and services	4 366.5	4 369.8	4 396.0	4 437.5	4 505.2	1.5	3.2

Source: Statistics Canada.

Note: Numbers may not add to totals due to rounding.

TABLE 4. CANADA, REAL GROSS DOMESTIC PRODUCT AT FACTOR COST BY INDUSTRIES INVOLVED IN MINERAL MANUFACTURING, IN 1986 PRICES, QUARTERLY (SEASONALLY ADJUSTED AT ANNUAL RATES)

Industry	1992 1st Quarter	1992 2nd Quarter	1992 3rd Quarter	1992 4th Quarter	1993 1st Quarter	% Change 1st Quarter 1993 4th Quarter 1992	% Change 1st Quarter 1993 1st Quarter 1992
(\$ millions)							
PRIMARY METAL INDUSTRIES	6 492.3	6 473.0	6 673.1	7 198.2	7 528.2	4.6	16.0
Primary steel industries	2 611.8	2 604.6	2 656.5	3 069.9	3 203.0	4.3	22.6
Steel, pipe and tube industries	409.3	357.2	372.0	479.9	524.1	9.2	28.0
Iron foundries	283.7	297.0	298.1	301.6	302.5	0.3	6.6
Nonferrous smelting and refining industries	2 339.9	2 361.2	2 474.5	2 467.7	2 569.4	4.1	9.8
FABRICATED METAL PRODUCTS INDUSTRIES	5 300.7	5 320.6	5 239.9	5 160.5	5 303.0	2.8	0.0
Power boiler and heat exchanger industry	1 023.4	999.7	908.9	859.5	887.8	3.3	-13.2
Ornamental and architectural metal products industry	605.3	604.8	586.3	527.9	522.4	-1.0	-13.7
Stamped, pressed and coated metals	1 150.8	1 173.3	1 188.4	1 207.1	1 256.3	4.1	9.2
Wire and wire products industries	461.7	468.4	485.9	473.3	489.8	3.5	6.1
Hardware, tool and cutlery industries	741.2	751.1	767.9	793.7	855.4	7.8	15.4
Heating equipment industry	171.6	187.7	204.9	208.2	192.1	-7.7	11.9
Machine shops industry	576.2	562.3	530.8	537.1	537.9	0.1	-6.6
Other metal-fabricating industries	570.4	573.3	566.8	553.5	561.4	1.4	-1.6
NONMETALLIC MINERAL PRODUCTS INDUSTRIES	2 409.2	2 486.5	2 448.6	2 463.0	2 390.9	-2.9	-0.8
Cement industry	315.2	334.7	335.7	333.2	290.9	-12.7	-7.7
Concrete products industries	317.6	336.8	335.1	303.6	268.0	-11.7	-15.6
Ready-mix concrete industry	362.9	383.7	389.6	409.4	354.5	-13.4	-2.3
Glass and glass products industries	524.8	540.2	506.1	537.2	559.8	4.2	6.7
Miscellaneous nonmetallic mineral products	771.4	772.9	764.1	759.4	793.0	4.4	2.8

Source: Statistics Canada.

Note: Numbers may not add to totals due to rounding.

TABLE 5. CANADA'S WORLD ROLE AS A PRODUCER OF CERTAIN IMPORTANT MINERALS, 1991

			Rank of Five Leading Countries					
			World	1	2	3	4	5
Uranium (U concentrates) ^a	t	25 330	Canada 8 200 ^b 32.4	Australia 3 780 14.9	United States 3 060 12.1	Niger 2 960 11.7	France 2 480 9.8	
	% of Western World total		Canada 1 157 15.4	Australia 1 048 14.0	U.S.S.R. 800 10.6	China 710 9.5	Peru 628 8.4	
Zinc (mine production)	000 t	7 512	U.S.S.R. 8 562 32.8	Canada 7 406 28.3	Germany 3 902 14.9	United States 1 692 6.5	Israel 1 270 4.9	
	% of world total		U.S.S.R. 200 23.1	Canada 192 22.1	New Caledonia 100 11.5	Australia 69 8.0	Indonesia 66 7.6	
Potash (K ₂ O equivalent)	000 t	26 126	U.S.S.R. 2 500 ^e 62.3	Canada 639 ^e 15.9	Brazil 200 ^e 5.0	China 200 ^e 5.0	Zimbabwe 160 ^e 4.0	
	% of world total		United States 9 503 25.6	Canada 6 258 16.9	U.S.S.R. 5 334 14.4	Poland 3 917 10.6	Saudi Arabia 2 045 5.5	
Nickel (mine production)	000 t	867	South Africa 147 000 50.3	U.S.S.R. 121 500 41.5	Canada 11 708 4.0	United States 7 780 2.7	Japan 2 041 0.7	
	% of world total		United States 4 121 23.4	U.S.S.R. 2 100 11.9	Canada 1 822 10.4	Australia 1 235 7.0	Brazil 1 140 6.5	
Asbestos	000 t	4 011	Zaire 8 790 32.8	U.S.S.R. 5 000 ^e 18.7	Zambia 4 817 18.0	Canada 2 171 8.1	Cuba 1 200 ^e 4.5	
	% of world total		United States 53 364 47.4	China 16 000 14.2	Chile 14 540 12.9	Canada 11 329 10.1	U.S.S.R. 10 000 8.9	
Sulphur, elemental	000 t	37 084	United States 13 880 14.4	China 8 074 8.4	Iran 7 983 8.3	Canada 6 830 7.1	Japan 6 350 6.6	
	% of world total		Australia 1 582 29.1	South Africa 975 ^d 17.9	Norway 800 14.7	Canada 600 ^{e, b, c} 11.0	Malaysia 336 6.2	
Platinum group metals (mine production)	kg	292 426	Chile 1 814 19.9	United States 1 631 17.9	U.S.S.R. 840 9.2	Canada 811 8.9	Zambia 423 4.6	
	% of world total		Mexico 2 196 15.5	United States 1 848 13.1	Peru 1 769 12.5	Canada 1 339 9.5	U.S.S.R. 1 270 9.0	
Aluminum (primary metal)	000 t	17 574	Japan 2 889 14.0	U.S.S.R. 2 000 9.7	Belgium 1 810 8.8	Canada 1 787 8.6	United States 1 676 8.1	
	% of world total		Australia 579 17.3	United States 477 14.3	U.S.S.R. 460 13.8	China 320 9.6	Canada 277 8.3	
Cobalt (shipments)	t	26 806	South Africa 601 29.8	United States 290 14.4	U.S.S.R. 240 11.9	Australia 236 11.7	Canada 177 8.8	
	% of world total							
Molybdenum (Mo content)	t	112 553						
	% of world total							
Gypsum	000 t	96 551						
	% of world total							
Titanium concentrates (ilmenite)	000 t	5 436						
	% of world total							
Copper (mine production)	000 t	9 125						
	% of world total							
Silver (mine production)	t	14 123						
	% of world total							
Cadmium (refined production)	t	20 678						
	% of world total							
Lead (mine production)	000 t	3 339						
	% of world total							
Gold (mine production)	t	2 017						
	% of world total							

* Estimated; ^p Preliminary.

^a Total of Western World. ^b Includes uranium (tU) recovered by Elliot Lake producers from refinery/conversion facility wastes. ^c Titaniferous slag with 80% TiO₂ content.

^d Titaniferous slag with 85% TiO₂ content.

TABLE 6. CANADA, APPARENT CONSUMPTION¹ OF SOME MINERALS AND RELATION TO PRODUCTION,² 1989-91

	1989			1990			1991 ^p		
	Apparent Consumption	Production	Consumption as % of Production	Apparent Consumption	Production	Consumption as % of Production	Apparent Consumption	Production	Consumption as % of Production
	(tonnes)			(tonnes)			(tonnes)		
Quartz silica	3 117 854	2 491 000	125.2	2 921 507 ^r	2 081 170	140.4 ^r	2 115 864	1 495 146	141.5
Salt	11 381 522	11 158 411	102.0	11 388 890	11 191 385	101.8	10 290 717	11 870 859	86.7
Lime	2 512 602	2 551 934	98.5	2 266 327	2 340 737	96.8	2 304 345	2 375 260	97.0
Cement ³	10 724 725	12 590 637	85.2	9 560 239 ^r	11 745 152	81.4 ^r	7 194 192	9 372 219	76.8
Gypsum	3 113 906	8 179 588	38.1	2 538 472	7 977 685	31.8	2 036 891	6 727 221	30.3
Iron ore	14 590 583	39 445 047	37.0	12 742 241 ^r	35 670 008	35.7	10 708 938	35 421 247	30.2
Potash (K ₂ O)	341 970	7 014 074	4.9	354 596 ^r	7 344 620	4.8 ^r	663 808	7 087 027	9.4
Asbestos	5 496 ^r	714 036	0.8 ^r	37 021 ^r	685 627	5.4 ^r	822	686 008	0.1

Sources: Energy, Mines and Resources Canada; Statistics Canada.

^p Preliminary; ^r Revised.¹ "Apparent consumption" is production plus imports, less exports. ² "Production" refers to producers' shipments. ³ Apparent consumption contains clinker cement in the trade data.

TABLE 7. CANADA, REPORTED CONSUMPTION OF MINERALS AND RELATION TO PRODUCTION, 1989-91

TABLE 7. CANADA, REPORTED CONSUMPTION OF MINERALS AND RELATION TO PRODUCTION, 1989-91										
	Unit of Measure	1989			1990			1991 ^p		
		Consumption	Production	Consumption as % of Production	Consumption	Production	Consumption as % of Production	Consumption	Production	Consumption as % of Production
METALS										
Aluminum ¹	t	508 810 ^r	1 554 753	32.7 ^r	465 915 ^r	1 567 395	29.7 ^r	466 227	1 821 642	25.6
Antimony	kg	442 942	2 817 810	15.7	294 321	564 527	52.1	406 221	428 559	94.8
Bismuth	kg	16 158	156 727	10.3	12 032	74 300	16.2	32 036	59 526	53.8
Cadmium	kg	28 826	1 710 527	1.7	35 194	1 333 664	2.6	27 667	1 549 087	1.8
Chromium (chromite)	t	21 066	—	..	19 921	—	..	14 751	—	..
Cobalt	kg	147 299	2 344 389	6.3	194 205	2 183 620	8.9	165 908	2 171 483	7.6
Copper ²	t	218 571	704 432	31.0	184 497 ^r	771 433	23.9 ^r	185 055	780 362	23.7
Lead ³	t	87 715 ^r	268 887	32.6 ^r	71 468 ^r	233 372	30.6 ^r	68 252	248 102	27.5
Magnesium	t	15 407	x	x	15 125	x	x	15 248	x	x
Manganese ore	t	203 574	—	..	253 002 ^r	—	..	109 028	—	..
Mercury	kg	31 914	—	..	33 907	—	..	9 299	—	..
Molybdenum (Mo content)	t	1 383	13 543	10.2	1 179	12 188	9.7	1 644	11 437	14.4
Nickel	t	10 423	195 554	5.3	8 410 ^r	195 004	4.3 ^r	11 577	188 098	6.2
Selenium	kg	14 806	212 794	7.0	13 798	369 193	3.7	18 479	226 636	8.2
Silver	kg	531 046	1 312 433	40.5	579 407	1 381 257	41.9	399 295	1 261 359	31.7
Tellurium	kg	x	7 562	x	x	12 212	x	x	16 108	x
Tin	t	3 567	x	x	3 600	3 844	93.7	3 146	4 392	71.6
Tungsten (W content)	kg	345 018	—	..	326 216 ^r	—	..	254 593	—	..
Zinc ³	t	145 282 ^r	1 272 854	11.4 ^r	123 387 ^r	1 179 372	10.5 ^r	102 220	1 083 008	9.4
NONMETALS										
Barite	t	16 495	38 511	42.8	17 164	43 906	39.1	11 654	46 614	25.0
Feldspar	t	2 049	—	..	2 177	—	..	2 346	—	..
Fluorspar	t	162 528	x	x	140 569	x	x	108 776	—	..
Mica	kg	6 395 ^r	x	x	4 066 ^r	x	x	3 552	x	x
Nepheline syenite	t	88 660	551 324	16.1	72 258	532 911	13.6	65 973	485 520	13.6
Phosphate rock	t	1 884 742	—	..	1 392 043	—	..	1 181 971	—	..
Potash (K ₂ O)	t	214 023 ^r	7 014 074	3.1 ^r	262 934 ^r	7 344 620	3.6 ^r	264 280	7 087 027	3.7
Sodium sulphate	t	223 135	327 444	68.1	184 045	346 607	53.1	144 287	334 959	43.1
Sulphur	t	1 082 380	6 558 584	16.5	1 017 273 ^r	6 611 933	15.4 ^r	946 691	6 929 014	13.7
Talc, etc.	t	72 447	144 828	50.0	70 004	130 861	53.5	63 529	114 898	55.3
FUELS										
Coal	000 t	53 881	70 527	76.4	49 039	68 332	71.8	50 282	71 133	70.7
Crude oil ⁴	000 m ³	87 789	90 641	96.9	90 207	90 279	99.9	84 359	89 788	94.0
Natural gas ⁵	million m ³	52 336	96 117	54.5	50 565 ^r	98 771	51.2 ^r	49 983	105 244	47.5

Sources: Energy, Mines and Resources Canada; Statistics Canada.

— Nil; .. Not available; ^p Preliminary; ^r Revised; x Confidential.

¹ Consumption of primary aluminum ingot and alloys, secondary ingot and scrap, reported by consumers. ² Consumption defined as domestic shipments of refined copper plus imports of refined copper. ³ Consumption of primary and secondary refined metal. ⁴ Consumption defined as refinery receipts. ⁵ Consumption defined as domestic sales.

Notes: Unless otherwise stated, consumption refers to reported consumption of refined metals or nonmetallic minerals by consumers. Production of metals, in most cases, refers to production in all forms, and includes the recoverable content of ores, concentrates, matte, etc., and metal content of primary products recoverable at domestic smelters and refineries. Production of nonmetals refers to producers' shipments. For fuels, production is equivalent to actual output less waste.

TABLE 8. CANADA, DOMESTIC CONSUMPTION OF PRINCIPAL REFINED METALS IN RELATION TO REFINERY PRODUCTION,¹ 1985-91

	Unit of Measure	1985	1986	1987	1988	1989	1990	1991P
ALUMINUM								
Domestic consumption ²	t	346 033	388 879	413 237	493 986	508 810 ^r	465 915 ^r	466 227
Production	t	1 282 316	1 355 161	1 540 439	1 534 499	1 554 753	1 567 395	1 821 642
Consumption of production	%	27.0	28.7	26.8	32.2	32.7 ^r	29.7 ^r	25.6
COPPER								
Domestic consumption ³	t	222 466	225 586	231 288	236 280	218 571	184 497 ^r	185 055
Production	t	499 626	493 445	491 124	528 723	515 216	515 835	538 339
Consumption of production	%	44.5	45.7	47.1	44.7	42.4	35.8 ^r	34.4
LEAD								
Domestic consumption ⁴	t	104 447	94 680	97 281	88 041	87 715 ^r	71 468 ^r	68 252
Production ⁵	t	240 011	257 680	230 661	268 076	242 845	183 645	212 366
Consumption of production	%	43.5	36.7	42.2	32.8	36.1 ^r	38.9 ^r	32.1
ZINC								
Domestic consumption ⁴	t	123 256	126 115	131 659	150 616	145 282 ^r	123 387 ^r	102 220
Production	t	692 406	570 981	609 909	703 206	669 677	591 786	660 552
Consumption of production	%	17.8	22.1	21.6	21.4	21.7 ^r	20.8 ^r	15.5

Sources: Energy, Mines and Resources Canada; Statistics Canada.

P Preliminary; ^r Revised.

¹ Production of refined metal from all sources, including metal derived from secondary materials at primary refineries. ² Consumption of primary aluminum ingot and alloys, secondary ingot and scrap, reported by consumers. ³ Consumption defined as domestic shipments of refined copper plus imports of refined copper. ⁴ Consumption of primary and secondary refined metal, reported by consumers. ⁵ Production of primary and secondary refined lead.

TABLE 9. EXPORTS OF MINERAL COMMODITIES BY COUNTRY AND BY COMMODITY AS DEFINED BY THE HARMONIZED SYSTEM (H.S.), 1992 (12 MONTHS)

HS Chapter ¹	Description	United States		EEC ²		Japan		Mexico		Other		Total	
		(\$000)	(%)	(\$000)	(%)	(\$000)	(%)	(\$000)	(%)	(\$000)	(%)	(\$000)	(%)
25	Salts; sulphur; earths or stone, plastering materials, lime and cement	489 054	43.0	95 638	8.4	64 997	5.7	20 347	1.8	466 052	41.0	1 136 088	100
26	Ores, slag and ash	441 165	18.1	1 059 987	43.4	672 903	27.6	12 176	0.5	253 531	10.4	2 439 762	100
27	Mineral fuels, oils and products of their distillation; bituminous substances; mineral waxes ³	14 771 360	88.6	255 544	1.5	1 063 209	6.4	39 108	0.2	544 910	3.3	16 674 131	100
28	Inorganic chemicals; compounds of precious metals, radioactive elements, etc.	1 341 943	82.0	113 671	6.9	84 070	5.1	482	0.9	97 149	5.9	1 637 315	100
31	Fertilizers	1 039 084	66.9	22 103	1.4	71 636	4.6	—	—	420 189	27.1	1 553 012	100
68	Articles of stone, plaster, cement, asbestos, mica or similar materials	320 241	92.2	8 129	2.3	5 766	1.7	—	—	13 328	3.8	347 464	100
69	Ceramic products	39 926	80.7	2 371	4.8	312	0.6	6	—	6 859	13.9	49 474	100
70	Glass and glassware	349 346	82.8	52 199	12.4	4 268	1.0	106	—	16 038	3.8	421 957	100
71	Natural/cultured pearls, precious stones and metals, coins, etc.	1 813 045	54.9	140 292	4.3	56 737	1.7	156	—	1 289 789	39.1	3 300 019	100
72	Iron and steel	2 086 944	83.9	119 137	4.8	8 137	0.3	63 367	2.5	211 156	8.5	2 488 741	100
73	Articles of iron or steel	1 539 420	91.8	26 278	1.6	2 821	0.2	24 472	1.5	84 385	5.0	1 677 376	100
74	Copper and articles thereof	960 965	63.5	403 954	26.7	2 268	0.1	5	—	146 332	9.7	1 513 524	100
75	Nickel and articles thereof	559 525	33.5	487 553	29.2	87 642	5.3	4 819	0.3	529 732	31.7	1 669 271	100
76	Aluminum and articles thereof	2 609 945	72.8	436 898	12.2	250 294	7.0	475	—	287 575	8.0	3 584 287	100
78	Lead and articles thereof	93 526	74.1	22 305	17.7	2 154	1.7	—	—	8 293	6.6	126 278	100
79	Zinc and articles thereof	684 962	81.8	20 869	2.5	22 158	2.6	—	—	109 123	13.0	837 112	100
80	Tin and articles thereof	8 296	84.8	336	3.4	273	2.8	—	—	876	9.0	9 781	100
81	Other base metals; cermets; and articles thereof	85 820	37.7	44 210	19.4	13 908	6.1	1 074	0.5	82 911	36.4	227 923	100
Total mineral exports		29 233 667	73.6	3 311 474	8.3	2 413 553	6.1	166 593	0.4	4 568 228	11.5	39 693 515	100
Total domestic exports		118 421 827	77.0	10 994 816	7.2	7 412 842	4.8	770 570	0.5	16 156 430	10.5	153 756 485	100
Percentage mineral to domestic		24.7		30.1		32.6		21.6		28.3		25.8	

Source: Statistics Canada, Catalogue No. 65-003 (Quarterly).

— Nil.

¹ HS Chapter refers to a group of commodities covered in a specified chapter of the "Harmonized Commodity Description and Coding System," as of January 1, 1988. Canadian external trade statistics are classified according to the Harmonized System. ² EEC: European Economic Community. ³ Value of coal exports included in Chapter 27 is \$1889 million.

TABLE 10. IMPORTS OF MINERAL COMMODITIES BY COUNTRY AND BY COMMODITY AS DEFINED BY THE HARMONIZED SYSTEM (HS), 1992 (12 MONTHS)

HS Chapter ¹	Description	United States		EEC ²		Japan		Mexico		Other		Total	
		(\$000)	(%)	(\$000)	(%)	(\$000)	(%)	(\$000)	(%)	(\$000)	(%)	(\$000)	(%)
25	Salts; sulphur; earths or stone, plastering material, lime and cement	329 571	78.8	9 284	2.2	1 152	0.3	11 136	2.7	67 355	16.1	418 498	100
26	Ores, slag and ash	497 607	57.6	76 277	8.8	—	—	—	—	289 861	33.6	863 745	100
27	Mineral fuels, oils and products of their distillation; bituminous substances; mineral waxes ³	1 560 984	24.3	1 566 722	24.4	1 095	—	188 375	2.9	3 114 519	48.4	6 431 695	100
28	Inorganic chemicals; compounds of precious metals, radioactive elements, etc.	745 376	55.9	83 663	6.3	12 356	0.9	856	0.1	491 933	36.9	1 334 184	100
31	Fertilizers	194 340	83.6	19 602	8.4	697	0.3	17	—	17 848	7.7	232 504	100
68	Articles of stone, plaster, cement, asbestos, mica or similar materials	273 136	74.2	61 974	16.8	5 101	1.4	2 588	0.7	25 314	6.9	368 113	100
69	Ceramic products	182 878	34.4	175 094	32.9	48 580	9.1	6 468	1.2	119 013	22.4	532 033	100
70	Glass and glassware	886 886	79.2	86 665	7.7	46 437	4.1	34 911	3.1	65 215	5.8	1 120 114	100
71	Natural/cultured pearls, precious stones and metals, coins, etc.	847 121	62.5	121 346	9.0	5 079	0.4	1 225	0.1	379 556	28.0	1 354 327	100
72	Iron and steel	1 131 475	61.5	344 061	18.7	120 422	6.5	777	—	242 265	13.2	1 839 000	100
73	Articles of iron or steel	2 050 105	76.4	206 297	7.7	128 882	4.8	18 810	0.7	280 626	10.5	2 684 720	100
74	Copper and articles thereof	428 486	83.4	36 868	7.2	3 118	0.6	1 889	0.4	43 161	8.4	513 522	100
75	Nickel and articles thereof	63 771	23.7	32 272	12.0	1 197	0.4	219	0.1	171 775	63.8	269 234	100
76	Aluminum and articles thereof	1 246 436	88.4	105 068	7.5	4 496	0.3	1 287	0.1	52 039	3.7	1 409 826	100
78	Lead and articles thereof	18 118	92.1	210	1.1	52	0.3	1 270	6.5	31	0.2	19 681	100
79	Zinc and articles thereof	23 571	85.9	469	1.7	262	1.0	—	—	3 127	11.4	27 429	100
80	Tin and articles thereof	11 049	28.2	3 180	8.1	10	—	28	0.1	24 946	63.6	39 213	100
81	Other base metals; cermets; and articles thereof	97 377	56.0	15 507	8.9	1 649	0.9	—	—	59 414	34.2	173 947	100
Total mineral imports		10 588 287	53.9	2 944 559	15.0	380 585	1.9	269 856	1.4	5 447 998	27.8	19 631 285	100
Total domestic imports		96 397 728	65.2	14 439 438	9.8	10 757 824	7.3	2 751 069	1.9	23 519 783	15.9	147 865 842	100
Percentage mineral to domestic		11.0		20.4		3.5		9.8		23.2		13.3	

Source: Statistics Canada, Catalogue No. 65-006 (Quarterly).

— Nil.

¹ H.S. Chapter refers to a group of commodities covered in a specified chapter of the "Harmonized Commodity Description and Coding System," as of January 1, 1988. Canadian external trade statistics are classified according to the Harmonized System. ² EEC: European Economic Community. ³ Total value of coal imports included in Chapter 27 is \$659.51 million.

TABLE 11. CANADA, INDUSTRIAL FATALITIES PER THOUSAND WORKERS BY INDUSTRY GROUP,¹ 1988-90

	Fatalities			Number of Workers			Rate per 1000 Workers		
	1988 ^r	1989 ^r	1990 ^p	1988 ^r	1989 ^r	1990 ^p	1988 ^r	1989 ^r	1990 ^p
	(number)			(000)					
Agriculture	12	14	15	444	428	428	0.03	0.03	0.04
Forestry and fishing ²	83	78	75	112	109	103	0.74	0.72	0.73
Mining ³	120	99	78	182	179	180	0.66	0.55	0.43
Manufacturing	188	121	149	2 104	2 126	2 001	0.09	0.06	0.07
Construction	155	157	160	726	764	778	0.21	0.21	0.21
Transportation ⁴	134	146	133	905	961	951	0.15	0.15	0.14
Trade	67	69	53	2 168	2 186	2 247	0.03	0.03	0.02
Finance ⁵	22	30	25	728	733	755	0.03	0.04	0.03
Service ⁶	55	46	44	4 064	4 159	4 299	0.01	0.01	0.01
Public administration ⁷	60	56	70	812	841	831	0.07	0.07	0.08
Unknown	28	26	75	..	..	..	..	..	..
Total	924	842	877	12 245	12 486	12 573	0.08	0.07	0.07

Source: Labour Canada.

.. Not available; ^p Preliminary; ^r Revised.

¹ Includes fatalities resulting from occupational chest illnesses such as silicosis, lung cancer, etc. ² Includes trapping and hunting. ³ Includes quarrying and oil wells. ⁴ Includes storage, communication, electric power and water utilities, and highway maintenance. ⁵ Includes insurance and real estate. ⁶ Includes community, business and personal services. ⁷ Includes defence.

TABLE 12. CANADA, RATE OF INDUSTRIAL FATALITIES PER THOUSAND WORKERS BY INDUSTRY GROUP,¹ 1986-90

	1986 ^r	1987 ^r	1988 ^r	1989 ^r	1990 ^p
Agriculture	0.03	0.04	0.03	0.03	0.04
Forestry and fishing ²	0.61	0.84	0.74	0.72	0.73
Mining ³	0.69	0.79	0.66	0.55	0.43
Manufacturing	0.07	0.08	0.09	0.06	0.07
Construction	0.26	0.22	0.21	0.21	0.21
Transportation ⁴	0.16	0.16	0.15	0.15	0.14
Trade	0.04	0.04	0.03	0.03	0.02
Finance ⁵	0.03	0.02	0.03	0.04	0.03
Service ⁶	0.01	0.01	0.01	0.01	0.01
Public administration ⁷	0.09	0.08	0.07	0.07	0.08
Total	0.08	0.08	0.08	0.07	0.07

Source: Labour Canada.

^p Preliminary; ^r Revised.¹ Includes fatalities resulting from occupational chest illnesses such as silicosis, lung cancer, etc.² Includes trapping and hunting. ³ Includes quarrying and oil wells. ⁴ Includes storage, communication, electric power and water utilities, and highway maintenance. ⁵ Includes insurance and real estate.⁶ Includes community, business and personal services. ⁷ Includes defence.

TABLE 13. CANADA, NUMBER OF STRIKES AND LOCKOUTS BY INDUSTRY, 1990-92

	1990			1991			1992 ^p		
	Strikes and Lockouts	Workers Involved	Duration in Person-Days	Strikes and Lockouts	Workers Involved	Duration in Person-Days	Strikes and Lockouts	Workers Involved	Duration in Person-Days
Agriculture	—	—	—	—	—	—	—	—	—
Forestry	1	50	810	5	627	44 330	4	128	4 090
Fishing and trapping	—	—	—	1	500	2 000	1	1 000	1 000
Mining	15	7 381	396 510	7	2 547	153 920	5	2 618	275 510
Manufacturing	237	66 575 ^r	2 440 830 ^r	163	18 632	571 580	151	40 054	882 590
Construction	25	123 767	1 149 550	31	3 820	35 040	22	22 125	151 270
Transportation and utilities	50	23 208 ^r	392 210 ^r	53	96 364	321 140	37	6 025	148 700
Trade	73	3 910 ^r	156 420	54	4 363	135 830	63	4 707	114 090
Finance, insurance and real estate	15	861 ^r	17 420 ^r	8	284	20 020	12	372	14 240
Service	126 ^r	37 419 ^r	457 610 ^r	114	38 481	468 230	72	53 189	519 880
Public administration	37	7 313	68 030	27	88 120	779 510	28	20 927	90 160
Various industries	—	—	—	—	—	—	—	—	—
Total, all industries	579	270 484	5 079 390	463	253 738	2 531 600	395	151 145	2 201 530

Source: Labour Canada.

— Nil; ^p Preliminary; ^r Revised.

TABLE 14. CANADA, NUMBER OF STRIKES AND LOCKOUTS BY MINING AND MINERAL MANUFACTURING INDUSTRIES, 1990-92

	1990			1991			1992P		
	Strikes and Lockouts	Workers Involved	Duration in Person-Days	Strikes and Lockouts	Workers Involved	Duration in Person-Days	Strikes and Lockouts	Workers Involved	Duration in Person-Days
MINES	15	7 381	396 510	7	2 547	153 920	5	2 618	275 510
Metals	11	4 393	292 270	5	2 467	151 360	3	615	39 810
Mineral fuels	2	2 313	59 810	—	—	—	2	2 003	235 700
Nonmetals	2	675	44 430	—	—	—	—	—	—
Quarries	—	—	—	2	80	2 560	—	—	—
MINERAL MANUFACTURING	44	25 372	1 333 160	22	1 966	152 680	31	2 475	80 890
Primary metals	24	23 426	1 295 190	6	1 127	94 810	6	1 035	30 470
Nonmetallic mineral products	19	1 656	29 890	16	839	57 870	25	1 440	50 420
Petroleum and coal products	1	290	8 080	—	—	—	—	—	—

Source: Labour Canada.
 — Nil; P Preliminary.

TABLE 15. CANADA, CRUDE MINERALS TRANSPORTED BY CANADIAN RAILWAYS, 1988-90

	1988	1989	1990
	(kilotonnes)		
METALLIC MINERALS			
Iron ores and concentrates	39 835	41 594	35 801
Nickel-copper ores and concentrates	3 742	2 961	3 261
Alumina and bauxite	3 224	3 841	3 909
Zinc ores and concentrates	1 554	1 231	973
Copper ores and concentrates	1 185	955	1 048
Lead ores and concentrates	590	465	192
Metallic ores and concentrates, n.e.s.	63	80	46
Nickel ores and concentrates	—	—	7
Total	50 193	51 127	45 237
NONMETALLIC MINERALS			
Potash (KCl)	12 337	10 559	11 316
Sulphur, n.e.s.	6 559	4 227	4 925
Gypsum	5 418	5 621	5 258
Limestone, n.e.s.	3 008	2 939	1 955
Phosphate rock	1 236	1 275	1 040
Clay	1 025	786	109
Sulphur, liquid	1 002	1 016	568
Sand, industrial	985	854	275
Salt, rock	688	828	984
Sodium carbonate	659	631	531
Limestone, industrial	396	368	173
Nepheline syenite	302	321	294
Sodium sulphate	297	291	519
Nonmetallic minerals, n.e.s.	170	270	105
Salt, n.e.s.	161	137	77
Limestone, agricultural	122	55	6
Stone, n.e.s.	107	94	46
Silica	23	19	2
Abrasives, natural	21	27	9
Sand, n.e.s.	17	4	2
Barite	9	11	14
Asbestos	5	3	3
Peat and other mosses	1	2	2
Total	34 550	30 338	28 213
MINERAL FUELS			
Coal, bituminous	47 117	38 856	34 861
Coal, lignite	2 976	1 856	1 757
Natural gas and other crude bituminous substances	34	87	70
Coal, n.e.s.	24	2	5
Oil, crude	12	12	8
Total	50 163	40 813	36 701
Total crude minerals	134 906	122 278	110 151
Total revenue freight ¹ moved by Canadian railways	269 354	247 041	226 338
Crude minerals as a percentage of total revenue freight	50.1	49.5	48.7

Source: Statistics Canada.

— Nil; n.e.s. Not elsewhere specified.

¹ Revenue freight refers to a local or interline shipment from which earnings accrue to a carrier.

TABLE 16. CANADA, FABRICATED MINERAL PRODUCTS TRANSPORTED BY CANADIAN RAILWAYS, 1988-90

	1988	1989	1990
	(kilotonnes)		
METALLIC MINERAL PRODUCTS			
Ferrous mineral products			
Iron and steel scrap	2 068	2 254	1 252
Sheets and strips, steel	1 191	1 196	1 053
Ingots, blooms, billets, slabs of iron and steel	674	818	658
Bars and rods, steel	593	654	571
Structural shapes and sheet piling, iron and steel	476	453	239
Plates, steel	311	260	193
Pipes and tubes, iron and steel	275	459	265
Rails and railway track material	91	191	68
Castings and forgings, iron and steel	83	62	53
Pig iron	36	55	40
Ferroalloys	27	20	17
Other primary iron and steel	9	10	6
Wire, iron or steel	4	4	2
Total ferrous mineral products	5 838	6 436	4 417
Nonferrous mineral products			
Aluminum and aluminum alloy fabricated material, n.e.s.	760	822	705
Zinc and alloys	517	492	389
Copper and alloys, n.e.s.	391	373	381
Aluminum paste, powder, pigs, ingots, shot	352	191	377
Other nonferrous base metals and alloys	167	150	120
Lead and alloys	163	134	87
Nonferrous metal scrap	94	107	56
Slag, dross, etc.	49	99	51
Copper matte and precipitates	-	22	1
Total nonferrous mineral products	2 493	2 390	2 167
Total metallic mineral products	8 332	8 826	6 584
NONMETALLIC MINERAL PRODUCTS			
Fertilizers and fertilizer materials, n.e.s.	2 424	2 283	2 143
Portland cement, standard	1 813	1 716	1 559
Sulphuric acid	1 806	1 767	2 102
Gypsum basic products, n.e.s.	282	248	45
Cement and concrete basic products, n.e.s.	223	187	189
Nonmetallic mineral basic products, n.e.s.	210	178	159
Lime, hydrated and quick	185	168	181
Natural stone basic products, chiefly structural	166	152	115
Dolomite and magnesite, calcined	50	51	15
Glass basic products	45	36	3
Bricks and tiles, clay	30	50	3
Fire brick and similar shapes	24	21	6
Asbestos and asbestos-cement basic products	22	20	25
Plaster	9	9	2
Refractories, n.e.s.	6	3	4
Total	7 295	6 889	6 551
MINERAL FUEL PRODUCTS			
Refined and manufactured gases, fuel type	2 671	2 744	2 377
Diesel fuel	1 531	1 397	1 349
Gasoline	675	612	531
Fuel oil, n.e.s.	654	802	1 186
Coke, n.e.s.	623	459	355
Other petroleum and coal products	517	509	442
Petroleum coke	341	340	266
Lubricating oils and greases	304	331	267
Asphalts and road oils	248	211	191
Total	7 566	7 405	6 964
Total fabricated mineral products	23 193	23 120	20 099
Total revenue freight ¹ moved by Canadian railways	269 354	247 041	226 338
Fabricated mineral products as a percentage of total revenue freight	8.6	9.4	8.9

Source: Statistics Canada.

- Nil; n.e.s. Not elsewhere specified.

¹ Revenue freight refers to a local or interline shipment from which earnings accrue to a carrier.

TABLE 17. CANADA, CRUDE MINERALS AND FABRICATED MINERAL PRODUCTS TRANSPORTED BY CANADIAN RAILWAYS, 1960-90

	Total Revenue Freight ¹	Total Crude Minerals	Total Fabricated Mineral Products	Total Crude and Fabricated Minerals	Crude and Fabricated Minerals as Percent of Revenue Freight
	(million tonnes)				
1960	142.8	57.1	14.5	71.6	50.1
1961	138.9	54.1	13.6	67.7	48.7
1962	146.0	60.3	13.8	74.1	50.8
1963	154.6	62.9	15.5	78.4	50.6
1964	180.0	74.6	15.9	90.5	50.3
1965	186.2	80.9	17.3	98.2	52.7
1966	194.5	80.6	17.8	94.8	50.6
1967	190.0	81.2	17.7	98.9	52.1
1968	195.4	86.7	18.8	105.5	54.0
1969	189.0	81.9	27.6	109.5	57.9
1970	211.6	97.5	28.4	125.9	59.5
1971	214.5	95.6	27.4	123.0	57.3
1972	215.8	89.4	27.6	117.0	54.2
1973	241.2	113.1	29.1	142.2	59.0
1974	246.3	115.3	30.9	146.2	59.4
1975	226.0	110.6	26.6	137.2	60.7
1976	238.5	116.6	25.5	142.1	59.6
1977	247.2	121.1	25.7	146.8	59.4
1978	238.8	107.7	26.2	133.9	56.1
1979	257.9	127.2	26.6	153.8	59.6
1980	254.4	124.8	24.6	149.4	58.7
1981	246.6	120.7	26.4	147.1	59.7
1982	212.5	95.7	21.0	116.7	54.9
1983	222.8	95.3	22.7	118.0	53.0
1984	254.6	121.1	25.1	146.2	57.4
1985	250.6	125.2	24.3	149.5	59.7
1986	249.8	121.2	23.0	144.2	57.7
1987	261.4	122.2	22.7	144.9	55.4
1988	269.4	134.9	23.2	158.1	58.7
1989	247.0	122.3	23.1	145.4	58.9
1990	226.3	110.2	20.1	130.3	57.5

Source: Statistics Canada.

¹ Revenue freight refers to a local or interline shipment from which earnings accrue to a carrier.

TABLE 18. CANADA, CRUDE MINERALS LOADED AND UNLOADED IN COASTWISE SHIPPING, 1991

	Loaded					Unloaded				
	Atlantic	St. Lawrence	Great Lakes	Pacific	Total	Atlantic	St. Lawrence	Great Lakes	Pacific	Total
(tonnes)										
METALLIC MINERALS										
Iron ore and concentrates	—	6 022 920	44 810	—	6 067 730	—	1 234 959	4 832 772	—	6 067 731
Aluminum ores and concentrates	—	21 675	—	—	21 675	—	—	21 675	—	21 675
Other ores and base-metal products	199	1 659 930	284 852	—	1 944 981	199	1 659 930	284 852	—	1 944 981
Total metallic minerals	199	7 704 525	329 662	—	8 034 386	199	2 894 889	5 139 299	—	8 034 387
NONMETALLIC MINERALS										
Limestone	102	—	1 677 289	311 321	1 988 712	102	49 892	1 627 397	311 321	1 988 712
Sand and gravel	112 909	—	212 031	706 885	1 031 825	112 909	—	212 031	706 885	1 031 825
Gypsum	429 723	—	—	27 367	457 090	—	329 828	99 895	27 367	457 090
Salt	1 373 108	47 337	1 606 560	14 966	3 041 971	281 343	1 440 026	1 305 636	14 966	3 041 971
Sulphur	—	1 930	—	1 973	3 903	—	1 930	—	1 973	3 903
Potash	—	—	83 304	—	83 304	—	34 526	48 778	—	83 304
Other mineral products	572 737	216 505	1 533 198	100 373	2 422 813	518 573	624 091	1 179 776	100 373	2 422 813
Total nonmetallic minerals	2 488 579	265 772	5 112 382	1 162 885	9 029 618	912 927	2 480 293	4 473 513	1 162 885	9 029 618
MINERAL FUELS										
Coal	100 162	42 486	2 296 566	114 665	2 553 879	51 098	91 550	2 296 566	114 665	2 553 879
Crude petroleum	—	6 606	—	—	6 606	—	6 606	—	—	6 606
Total mineral fuels	100 162	49 092	2 296 566	114 665	2 560 485	51 098	98 156	2 296 566	114 665	2 560 485
Total crude minerals	2 588 940	8 019 389	7 738 610	1 277 550	19 624 489	964 224	5 473 338	11 909 378	1 277 550	19 624 490
Total all commodities ¹	6 610 357	12 234 536	22 778 036	16 806 989	58 429 918	5 265 338	21 066 029	15 301 479	16 797 072	58 429 918
Crude minerals as a percentage of all commodities	39.2	65.5	34.0	7.6	33.6	18.3	26.0	77.8	7.6	33.6

Source: Statistics Canada.

— Nil.

¹ Includes metallic minerals, nonmetallic minerals and mineral fuels, along with all other cargo loaded and unloaded in coastwise shipping.

Notes: Numbers may not add to totals due to rounding. Data for the St. Lawrence ports are shown as a separate category this year; previously, they were included with the Atlantic ports.

TABLE 19. CANADA, FABRICATED MINERALS LOADED AND UNLOADED IN COASTWISE SHIPPING, 1991

	Loaded					Unloaded				
	Atlantic	St. Lawrence	Great Lakes	Pacific	Total	Atlantic	St. Lawrence	Great Lakes	Pacific	Total
(tonnes)										
METALLIC MINERAL PRODUCTS										
Iron, steel and alloys	2 817	11 413	76 736	17 404	108 370	11 310	74 216	5 440	17 404	108 370
Aluminum and aluminum products	—	194 812	—	—	194 812	—	194 812	—	—	194 812
Other ores and base-metal products	2 686	5 370	—	—	8 056	7 887	170	—	—	8 057
Total metallic mineral products	5 503	211 595	76 736	17 404	311 238	19 197	269 198	5 440	17 404	311 239
NONMETALLIC MINERAL PRODUCTS										
Cement and related products	961	126	441 904	6 882	449 873	1 088	93 492	348 412	6 882	449 874
Other fabricated nonmetallic minerals, n.e.s.	18 484	39 467	250 676	228 723	537 350	45 523	104 562	158 541	228 723	537 349
Total nonmetallic mineral products	19 445	39 593	692 580	235 605	987 223	46 611	198 054	506 953	235 605	987 223
MINERAL FUEL PRODUCTS										
Gasoline	1 490 451	1 188 165	398 146	397 796	3 474 558	1 205 741	1 407 354	463 667	397 796	3 474 558
Other fabricated mineral fuels, n.e.s.	2 098 237	1 843 749	1 073 795	581 131	5 596 912	2 072 576	2 163 237	780 531	580 566	5 596 910
Total mineral fuel products	3 588 688	3 031 914	1 471 941	978 927	9 071 470	3 278 317	3 570 591	1 244 198	978 362	9 071 468
Total fabricated mineral products	3 613 636	3 283 102	2 241 257	1 231 936	10 369 931	3 344 125	4 037 843	1 756 591	1 231 371	10 369 930
Total all commodities ¹	6 610 357	12 234 536	22 778 036	16 806 989	58 429 918	5 265 338	21 066 029	15 301 479	16 797 072	58 429 918
Crude minerals as a percentage of all commodities	54.7	26.8	9.8	7.3	17.7	63.5	19.2	11.5	7.3	17.7

Source: Statistics Canada.

— Nil; n.e.s. Not elsewhere specified.

¹ Includes metallic mineral products, nonmetallic mineral products and mineral fuel products, along with all other cargo loaded and unloaded in coastwise shipping.

Notes: Numbers may not add to totals due to rounding. Data for the St. Lawrence ports are shown as a separate category this year; previously they were included with the Atlantic ports.

**TABLE 20. CANADA, CRUDE AND FABRICATED MINERALS
LOADED AT CANADIAN PORTS IN COASTWISE SHIPPING,
1960-91**

	Total All Commodities ¹	Total Crude Minerals	Total Fabricated Minerals	Crude and Fabricated Minerals as Percentage of All Products
	(kilotonnes)			
1960	37 058	8 786	8 229	45.9
1961	41 861	9 527	8 857	43.9
1962	39 763	8 361	9 768	45.6
1963	40 328	7 998	9 942	44.5
1964	47 171	8 522	11 194	41.8
1965	48 200	9 183	11 766	43.5
1966	55 122	10 155	12 653	41.4
1967	49 799	11 509	12 207	47.6
1968	50 921	13 698	13 245	52.9
1969	51 890	12 746	14 181	51.9
1970	57 301	14 415	14 818	51.0
1971	55 128	14 783	15 374	54.7
1972	55 326	14 197	15 290	53.3
1973	55 314	16 573	15 615	58.2
1974	53 633	11 723	16 575	52.8
1975	54 373	15 687	17 510	61.1
1976	53 882	15 924	16 208	59.6
1977	58 309	18 131	17 435	61.0
1978	60 668	18 318	16 619	57.6
1979	79 950	22 130	17 486	49.6
1980	82 761	22 947	17 134	48.4
1981	71 271	17 849	16 669	48.4
1982	65 881	16 473	13 214	45.1
1983	67 598	21 248	12 025	49.2
1984	68 698	22 798	11 909	50.5
1985	61 717	19 867	10 291	48.9
1986	60 506	19 901	10 264	49.9
1987	67 572	20 969	11 118	47.5
1988	69 974	23 325	11 676	50.0
1989	61 122	22 963	11 825	56.9
1990	60 360	22 430	16 096	63.8
1991	58 430	19 624	10 370	51.3

Source: Statistics Canada.

¹ Includes metallic mineral products, nonmetallic mineral products and mineral fuel products, along with all other cargo loaded and unloaded in coastwise shipping.

TABLE 21. CANADA, CRUDE MINERALS LOADED AND UNLOADED AT CANADIAN PORTS IN INTERNATIONAL SHIPPING TRADE,¹ 1989-91

SHIPPING TRADE, 1989-91

	1989		1990		1991	
	Loaded	Unloaded	Loaded	Unloaded	Loaded	Unloaded
	(tonnes)					
METALLIC MINERALS						
Iron ore and concentrates	31 921 555	6 993 891	29 227 639	4 590 480	28 842 400	5 530 400
Aluminum ores and concentrates	21 561	4 660 980	19 162	4 251 610	755	2 506 141
Lead and zinc ores and concentrates	914 834	6 528	895 731	138 419	620 254	302 976
Copper and nickel ores and concentrates	1 249 357	172 477	1 223 635	97 430	1 196 012	97 223
Other ores and base-metal products	1 858 624	412 828	1 365 310	222 720	1 074 545	78 048
Total metallic minerals	35 965 931	12 246 704	32 731 477	9 300 659	31 733 966	8 514 788
NONMETALLIC MINERALS						
Limestone	1 149 695	684 279	1 153 471	484 877	1 238 636	417 760
Sand and gravel	466 352	1 361 671	485 993	1 379 781	494 771	1 348 947
Gypsum	5 711 513	301 545	5 307 978	408 273	4 779 328	260 324
Salt	1 983 508	1 510 057	1 962 923	1 507 466	2 564 940	677 604
Sulphur	4 448 002	55 027	4 913 004	178	4 544 358	2 234
Potash	6 084 022	184 452	6 411 306	112 629	6 079 029	30 068
Other nonmetallic minerals, n.e.s.	3 531 299	4 893 287	3 291 966	5 012 974	4 490 644	2 928 547
Total nonmetallic minerals	23 374 391	8 990 318	23 526 641	8 906 178	24 191 706	5 665 484
MINERAL FUELS						
Coal	29 940 842	15 180 835	30 929 789	14 097 683	32 750 231	11 362 713
Crude petroleum	1 434 497	18 242 493	1 315 721	19 392 330	1 489 166	18 018 389
Other mineral fuels	91 153	—	194	238	—	—
Total mineral fuels	31 466 492	33 423 328	32 245 704	33 490 251	34 239 397	29 381 102
Total crude minerals	90 806 814	54 660 350	88 503 822	51 697 088	90 165 069	43 561 374
Total all commodities ¹	156 568 302	79 670 214	159 039 270	73 296 005	168 009 713	66 117 151
Crude minerals as a percentage of all commodities	58.0	68.6	55.6	70.5	53.7	65.9

Source: Statistics Canada.

— Nil; n.e.s. Not elsewhere specified.

¹ Includes metallic minerals, nonmetallic minerals and mineral fuels, along with all other cargo loaded and unloaded at Canadian ports.

Note: Numbers may not add to totals due to rounding.

TABLE 22. CANADA, FABRICATED MINERAL PRODUCTS LOADED AND UNLOADED AT CANADIAN PORTS IN INTERNATIONAL SHIPPING TRADE,¹ 1989-91

	1989		1990		1991	
	Loaded	Unloaded	Loaded	Unloaded	Loaded	Unloaded
(tonnes)						
METALLIC MINERALS						
Iron, steel and alloys	1 898 150	1 982 130	2 494 124	1 769 750	2 745 360	1 309 350
Nonferrous metals, n.e.s.	762 061	204 929	1 046 627 ^r	484 174 ^r	1 194 058	2 940 088
Total metallic minerals	2 660 211	2 187 059	3 540 751 ^r	2 253 924 ^r	3 939 418	4 249 438
NONMETALLIC MINERALS						
Cement and related products	1 494 839	625 672	1 164 806 ^r	473 564 ^r	1 552 827	396 660
Other nonmetallic minerals, n.e.s.	270 415	492 025	1 167 413 ^r	879 879 ^r	1 666 767	1 532 368
Total nonmetallic minerals	1 765 254	1 117 697	2 332 219	1 353 443	3 219 594	1 929 028
MINERAL FUELS						
Gasoline	1 944 466	1 348 571	2 596 345	841 980	2 743 888	628 298
Fuel oil	5 193 961	6 172 370	4 054 455	3 973 134	4 486 712	4 293 526
Coke, petroleum and coal products	2 060 017	2 364 253	232 225	1 067 483	311 138	684 225
Other mineral fuels, n.e.s.	..	..	2 350 898	2 569 567	1 437 542	1 202 321
Total mineral fuels	9 198 444	9 885 194	9 233 923	8 452 164	8 979 280	6 808 370
Total fabricated mineral products	13 623 909	13 189 950	15 106 893 ^r	12 059 531 ^r	16 138 292	12 986 836
Total all commodities ¹	156 568 302	79 670 214	159 039 270	73 296 005	168 009 713	66 117 151
Fabricated minerals as a percentage of all commodities	8.7	16.6	9.5	16.5	9.6	19.6

Source: Statistics Canada.

.. Not available; n.e.s. Not elsewhere specified; ^r Revised.¹ Includes metallic products, nonmetallic minerals and mineral fuels, along with all other cargo loaded and unloaded at Canadian ports.

Note: Numbers may not add to totals due to rounding.

TABLE 23. CANADA, CRUDE MINERALS AND FABRICATED MINERAL PRODUCTS LOADED AT CANADIAN PORTS IN INTERNATIONAL SHIPPING TRADE, 1960-91

	Total All Commodities ¹	Total Crude Minerals	Total Fabricated Minerals	Crude and Fabricated Minerals as Percentage of All Products
	(kilotonnes)			
1960	45 872	24 671	2 039	58.2
1961	48 771	23 241	2 133	52.0
1962	54 676	30 446	2 296	59.9
1963	62 031	32 214	2 503	56.0
1964	75 760	42 087	2 602	59.0
1965	74 521	41 338	2 746	59.2
1966	76 192	41 374	3 350	58.7
1967	72 598	42 704	3 701	63.9
1968	78 663	48 680	2 960	65.6
1969	70 432	42 442	3 456	65.2
1970	95 807	55 849	4 965	63.5
1971	95 887	53 245	5 022	60.8
1972	98 988	51 912	9 091	61.6
1973	112 434	64 195	10 103	66.1
1974	106 110	64 093	9 041	68.9
1975	102 444	61 970	7 495	67.8
1976	114 815	71 527	6 108	67.6
1977	119 770	70 257	5 979	63.7
1978	116 522	62 291	7 556	59.9
1979	134 639	79 685	8 901	65.8
1980	138 161	67 898	11 770	57.7
1981	145 445	83 007	9 022	63.3
1982	125 282	65 594	7 115	58.0
1983	129 490	67 152	6 197	56.6
1984	145 322	82 752	7 986	62.4
1985	143 421	83 878	10 814	66.0
1986	144 561	84 720	8 303	64.3
1987	158 994	86 085	10 488	60.7
1988	171 064	98 934	12 227	65.0
1989	156 568	90 807	13 624	66.7
1990	159 039	88 504	15 107 ^r	65.1 ^r
1991 ^p	168 010	90 165	16 138	63.3

Source: Statistics Canada.

^p Preliminary; ^r Revised.

¹ Includes metallic products, nonmetallic products and mineral fuel products, along with all other cargo loaded and unloaded at Canadian ports.

